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# VxComm Utility

## User's Manual

<b><u>1. OVERVIEW</u></b>	<b>3</b>
<b>1.1. DRIVERS &amp; PLATFORMS</b>	<b>3</b>
<b>1.2. ARCHITECTURE</b>	<b>4</b>
<b>1.3. TCP PORTS</b>	<b>5</b>
<b><u>2. INSTALLING THE VXCOMM DRIVER</u></b>	<b>7</b>
<b>2.1. INSTALLATION OUTLINE</b>	<b>7</b>
<b>2.2. VXCOMM DRIVER INSTALLATION</b>	<b>7</b>
<b><u>3. ADDING 7188E/8000E/PDS-700 SERVER AND CONFIGURING VXCOMM DRIVER</u></b>	<b>10</b>
<b>3.1. ADVANCED OPTIONS</b>	<b>15</b>
<b><u>4. CONFIGURING COM PORT OF THE 7188E/8000E/ PDS-700 SERVER</u></b>	<b>17</b>
<b><u>5. REMOVING A 7188E/8000E/PDS-700 SERVER</u></b>	<b>20</b>
<b><u>6. UNINSTALLING VXCOMM DRIVER</u></b>	<b>22</b>
<b><u>7. DIAGNOSTICS &amp; TROUBLE SHOOTING</u></b>	<b>24</b>
<b>7.1. DIAGNOSTICS</b>	<b>24</b>
<b>7.1.1. LOOP-BACK TEST</b>	<b>24</b>
<b>7.1.2. EXTERNAL-DEVICES TEST</b>	<b>32</b>
<b>7.2. TROUBLE SHOOTING</b>	<b>35</b>
<b>7.2.1. CLIENT PROGRAM FAIL TO OPEN THE COM PORT THAT WAS CREATED BY THE VXCOMM DRIVER.</b>	<b>35</b>

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<b>7.2.2. CLIENT PROGRAM STILL FAILS TO OPEN THE COM PORT.</b>	<b>35</b>
<b>7.2.3. CLIENT PROGRAMS OPEN THE COM PORT WITH SUCCESS, BUT FAIL TO ACCESS THE DEVICE.</b>	<b>36</b>
<b>7.2.4. MAKE SURE THE IP ADDRESS IS NOT CURRENTLY BEING USED BY OTHER DEVICES</b>	<b>37</b>
<b>7.2.5. MAKE SURE IP ADDRESS, GATEWAY AND SUBNET MASK PROPER FOR YOUR NETWORK.</b>	<b>40</b>

<b>8. <u>VXCOMM DRIVER FAQ</u></b>	<b>41</b>
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<b>8.1. DOES VxCOMM DRIVER (PC) v2.00 WORK WITH VxCOMM SERVER v2.6.00?</b>	<b>41</b>
<b>8.2. DOES VxCOMM DRIVER (PC) SUPPORT AUTO-RECONNECTION AFTER FIXING A NETWORK BREAK?</b>	<b>41</b>
<b>8.3. WHY CAN'T VxCOMM DRIVER (PC) RECEIVE DATA FROM 7188E/8000E/PDS-700?</b>	<b>42</b>
<b>8.4. DOES A RS-232/485/422 DEVICE BECOME FASTER WHILE WORKING ON INTERNET/ETHERNET?</b>	<b>43</b>
<b>8.5. WHY DOES THE 7188E/8000E/PDS-700 WORK FAILS ON (PUBLIC) INTERNET?</b>	<b>45</b>
<b>8.6. CAN SETCOMMSTATE ( ) API CHANGE THE BAUD RATE/DATA BITS/PARITY/STOP BITS?</b>	<b>47</b>
<b>8.7. HOW MANY PCs CAN BE CONNECTED TO ONE 7188E/8000E/ PDS-700 DEVICE?</b>	<b>47</b>

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# 1. Overview

“**VxComm**” stands for “Virtual Communications Ports”.

“**VxComm Driver**” package includes driver, utility and online help files.

## 1.1. Drivers & Platforms

Note: You must use the correct driver depends on your platform.

**VxComm98.exe**: for Windows 95/OSR2, 98/SE, ME

Platform	Version
Windows 95	v4.00.950
Windows 95 OSR2	v4.00.950 B
Windows 98	v4.10.1998
Windows 98 SE	v4.10.2222 A
Windows ME	v4.90.3000

**VxComm2K.exe**: for Windows NT 4.0, 2000/XP/2003 and Vista32 (32-bit)

You can get the driver (includes utility) in the enclosed CD:

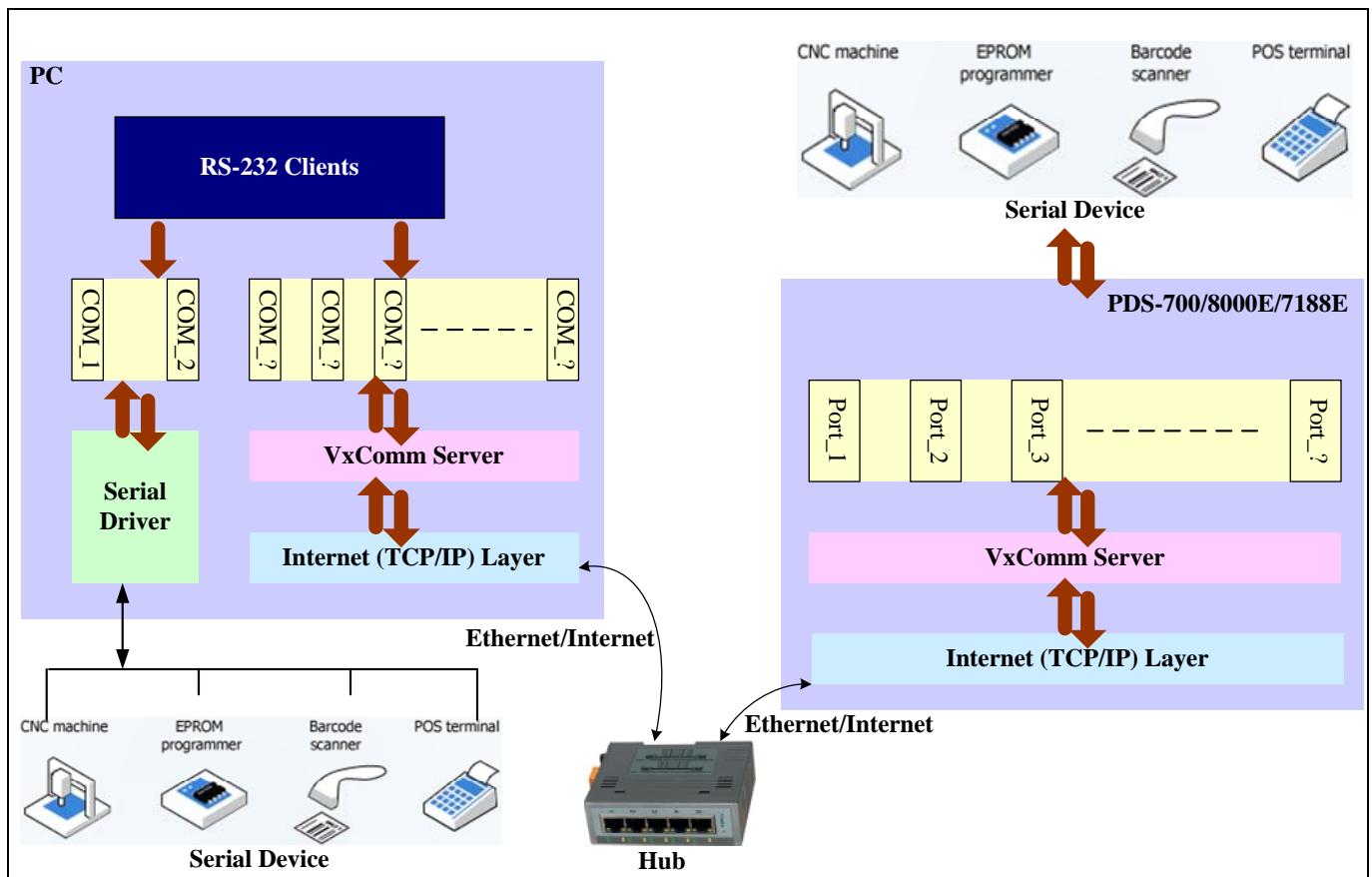
CD: \Napdos\7188e\Tcp\VxComm\Driver (PC).

You can also get the newest version from our web site

[ftp://ftp.icpdas.com/pub/cd/8000cd/napdos/7188e/tcp/vxcomm/driver\(pc\)/](http://ftp.icpdas.com/pub/cd/8000cd/napdos/7188e/tcp/vxcomm/driver(pc)/)

## 1.2. Architecture

VxComm Driver creates COM port(s) and maps them to Ethernet port(s) of 7188E/8000E/PDS-700. User's RS-232 client programs only need to change to the different COM port to access serial devices that are allocated on Internet or Ethernet network via 7188E/8000E/PDS-700.



## 1.3. TCP Ports

The default TCP port number of [7188E/8000E/PDS-700](#) are 10000~10008. These TCP ports are used to access the Ethernet/Internet ports 1~8 of [7188E/8000E/PDS-700](#). Another TCP port number (9999) is designed for the virtual I/O only. Client programs can go through this TCP port (9999) to access the embedded [I/O expansion board](#) with A/D and D/A

[VxComm Driver](#) uses "Ports 1~8" to map to the TCP ports 10001~10008, and uses the "Port I/O" to map to the TCP port 9999. After this, users can choose virtual COM port(s) to map to the "Ports 1~8" and/or "Port I/O".

COM Port (PC)	<a href="#">VxComm Driver /Utility (PC)</a>	<a href="#">VxComm Server (7188E/8000E/PDS-700)</a>	Ethnernet/Internet Port ( <a href="#">7188E/8000E/PDS-700</a> )
Not Used	Reserved (Command)	10000	Reserved (Command)
COM ?	Port 1	10001	COM 1
COM ?	Port 2	10002	COM 2
COM ?	Port 3	10003	COM 3
COM ?	Port 4	10004	COM 4
COM ?	Port 5	10005	COM 5
COM ?	Port 6	10006	COM 6
COM ?	Port 7	10007	COM 7
COM ?	Port 8	10008	COM 8
COM ?	Port I/O	9999	I/O

TCP port	10000	10001	10002	10003	10004	10005	10006	10007	10008	9999
7188E1	V	V								
7188E2/7188EA/7188EX	V	V	V							
7188E3	V	V	V	V						
7188E4	V	V	V	V	V					
7188E5	V	V	V	V	V	V				
7188E8	V	V	V	V	V	V	V	V	V	
8430/8830	V	V		V						V
8431/8831	V	V		V						V
DS-712	V	V								
DS-715	V	V								
PDS-720	V	V	V							
PDS-721	V	V	V							V
PDS-732	V	V	V	V						V
PDS-734	V	V	V	V						V
PDS-742	V	V	V	V	V					
PDS-743	V	V	V	V	V					V
PDS-752	V	V	V	V	V	V				
PDS-755	V	V	V	V	V	V				
PDS-762	V	V	V	V	V	V	V			V
PDS-782	V	V	V	V	V	V	V	V	V	
PDS-782-25	V	V	V	V	V	V	V	V	V	

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## 2. Installing the VxComm Driver

### 2.1. Installation Outline

#### Windows NT/2000/XP/2003 and Vista32 (32-bit)

1. Install "VxComm Driver 2K". ([VxComm2K.exe](#))
2. "VxComm Utility" will be automatically launched after the setup is completed.
3. Use it to configure VxComm Driver.

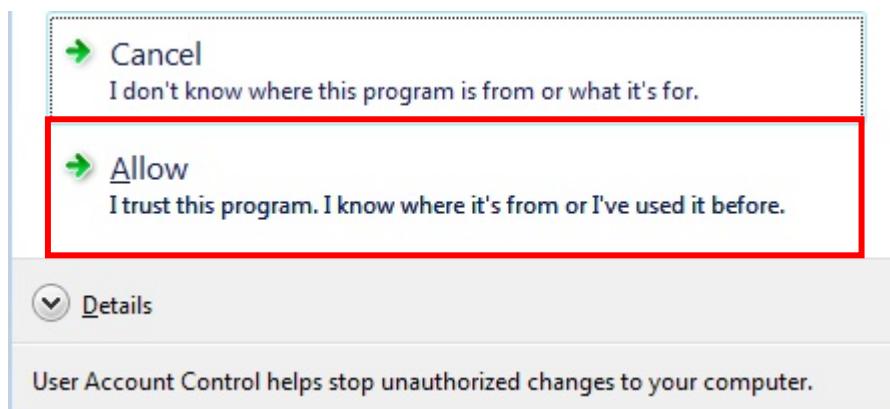
### 2.2. VxComm Driver Installation

#### Windows NT/2000/XP/2003 and Vista32 (32-bit)

Step 1: Find the [VxComm2K.exe](#) file (for Windows NT/2000/XP/2003/Vista32) in the enclosed CD or download in our web.

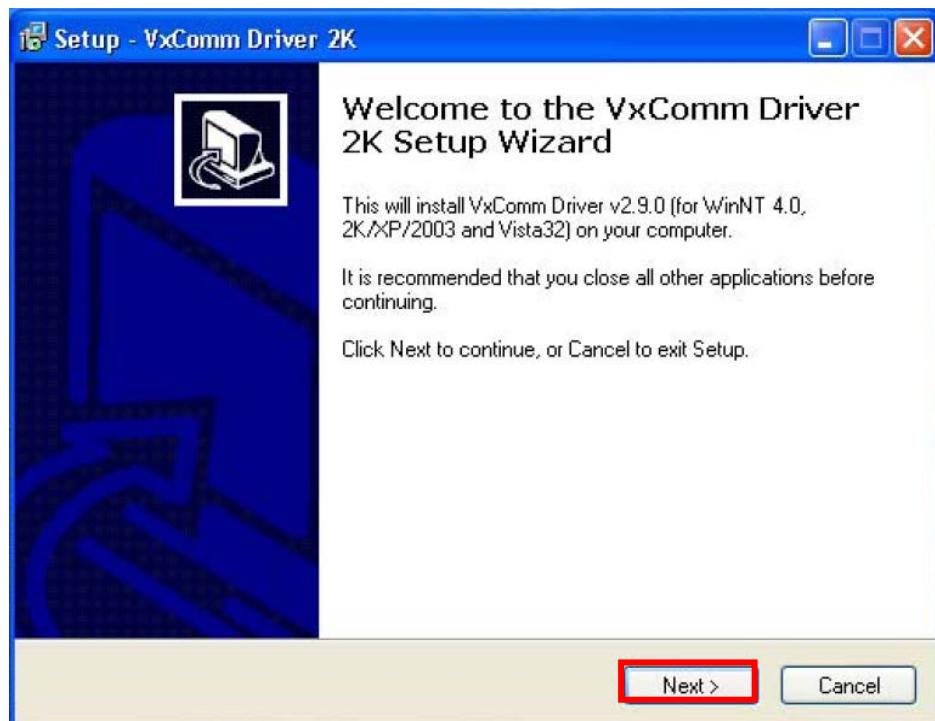
Step 2: Double click [VxComm2K.exe](#) and start to install.

Step 3: If your system is Vista32, then click the “[→Allow](#)” option.

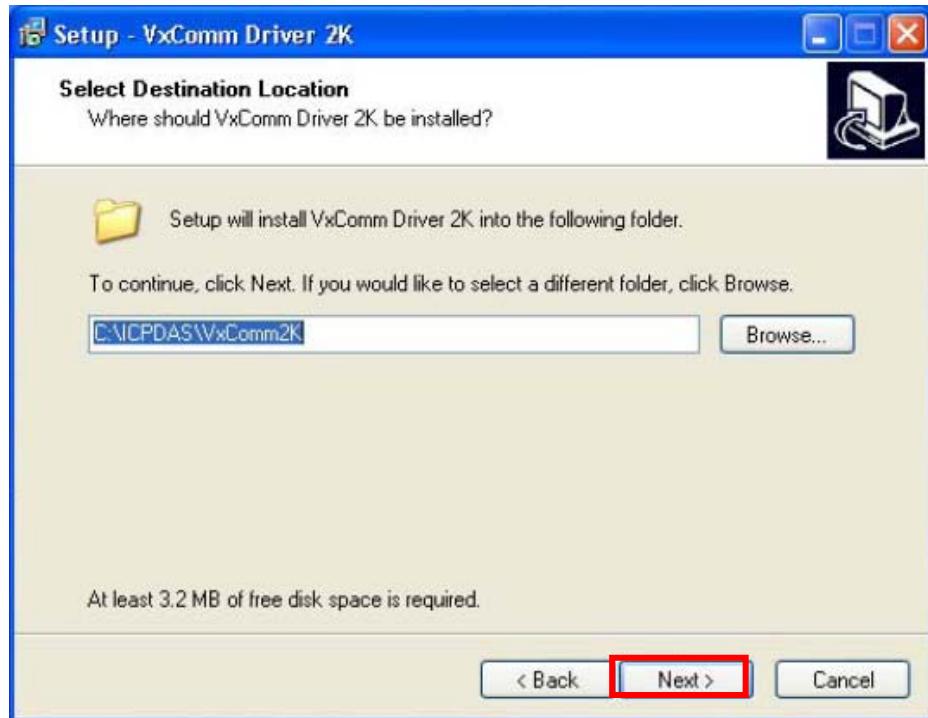


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Step 4: Click the "Next" button.

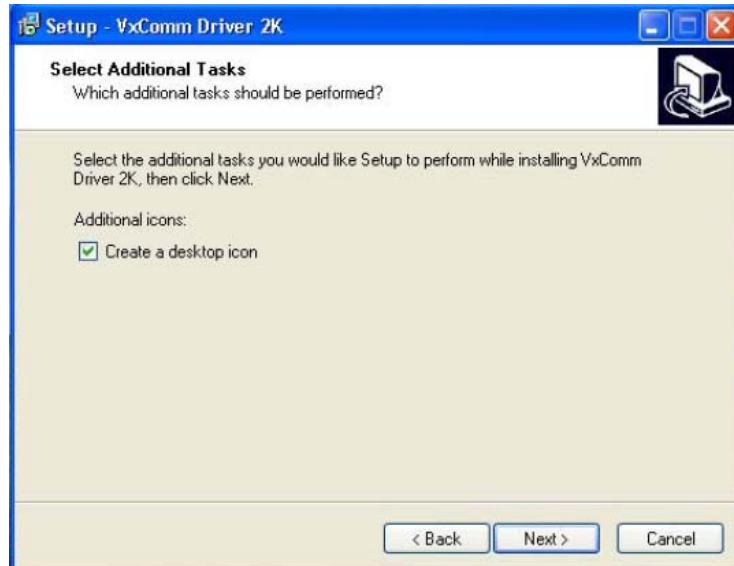


Step 5: Choose a destination folder and click the "Next" button.



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Step 6: Click the "Next" button.



Step 7: Click the "Finish" button.



Step 8: After the setup finished, [VxComm Utility](#) will ask you to configure the virtual COM port(s).

Please refer to "[Adding a 7188E/8000E/PDS-700 server and configuring VxComm Driver](#)" section.

### 3. Adding a 7188E/8000E/PDS-700 Server and Configuring VxComm Driver

VxComm Utility supports UDP Search feature from v2.9.0 and the feature can work correctly on VCOMM firmware v3.2.30 [11/30/2007] or latest.

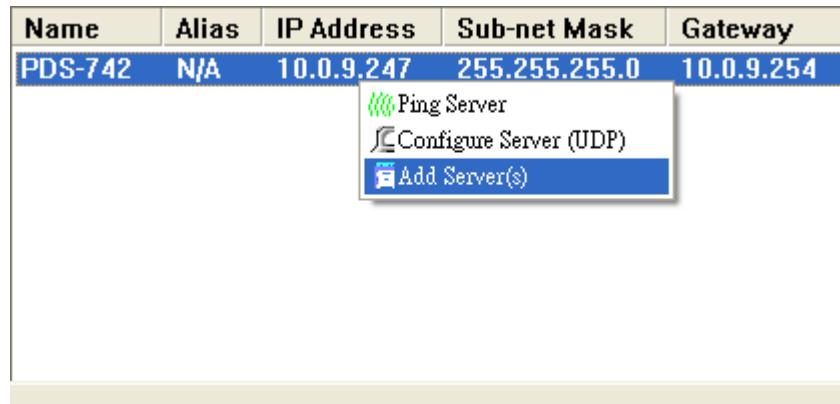
Now, we use a [PDS-742](#) with IP address [10.0.9.247](#) to be our example.

Step 1: Click the “[Search Servers](#)” button. And then VxComm Utility will search all [7188E/8000E/PDS-700](#) devices.

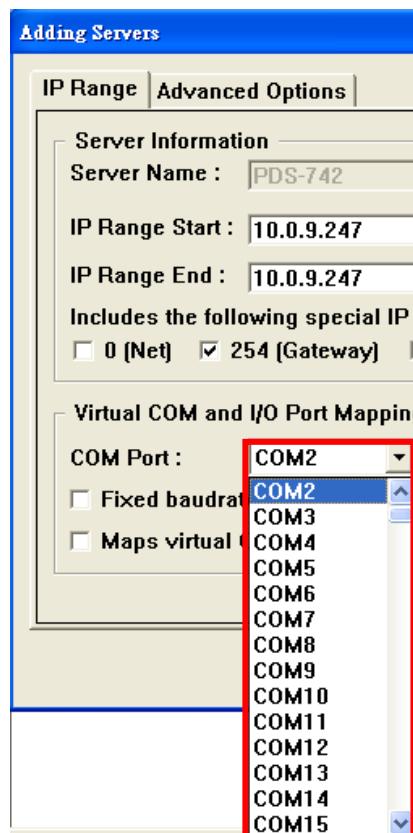


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Step 2: Right-Click your “Model Number” of 7188E/8000E/PDS-700 and then select “Add Server(s)”.

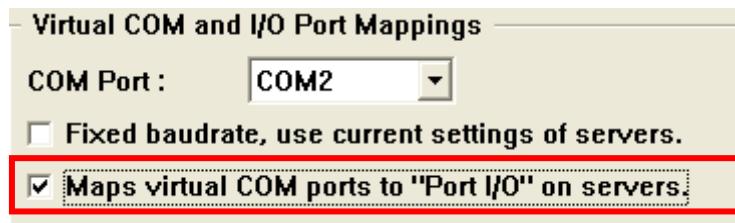


Step 3: The “Adding Servers” window is pop-up. Select a usable COM Port.



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Step 4: If your 7188E/8000E/PDS-700 device has DI/DO port, mark the “Maps virtual COM ports to “Port I/O” on servers.”



Note:

#### Server Name:

User can enable “Get name automatically” option to get 7188E/8000E/PDS-700 device name automatically. If user disables “Get name automatically” option, Server Name can be modified. The default server name is searched automatically by VxComm Utility. If user types another device server name, VxComm Utility can add it but its functions are the same with the device server which user types in the “Server Name”. If the server name isn’t any 7188E/8000E/PDS-700 device, the following window pops up.



#### IP Range Start & IP Range End:

If user adds only one 7188E/8000E/PDS-700 device, IP address in the “IP Range Start” and “IP Range End” are the same. If user adds multi-device, initial IP of all devices must type in “IP Range Start” and last IP of all devices must type in “IP Range End”. VxComm Utility can add all devices in VxComm Servers. If there is no 7188E/8000E/PDS-700 device in the IP range, the following windows pops up.



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### Skip duplicated IP:

Disable this option for checking that IP address is in VxComm servers or not. The setting default is skipping. If IP address is duplicated, the following window pops up.



### Includes the following special IP:

User can enable the options “0[Net], 254[Gateway], 255[Broadcast]”. If enable them, VxComm Utility adds device IP which includes these special IP.

### COM Port:

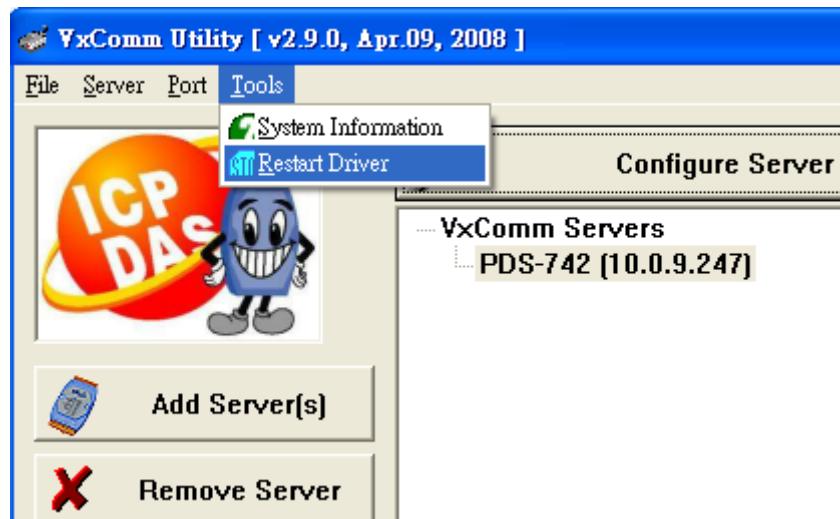
Select an available COM Port for port-1 of VxComm server. If 7188E/8000E/PDS-700 device has I/O port, user can enable the option “Maps virtual COM ports to “Port I/O” on servers” to map it on servers. If user enables the option “Fixed baudrate, use current settings of servers”, it can avoid that multi-processes change baudrate cause the error happening.

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Step 5: After all “IP Range” settings, click “OK” button.

Note: If user needs to set advanced options, please refer to chapter 3.1.

Step 6: Select “Tools → Restart Driver”.

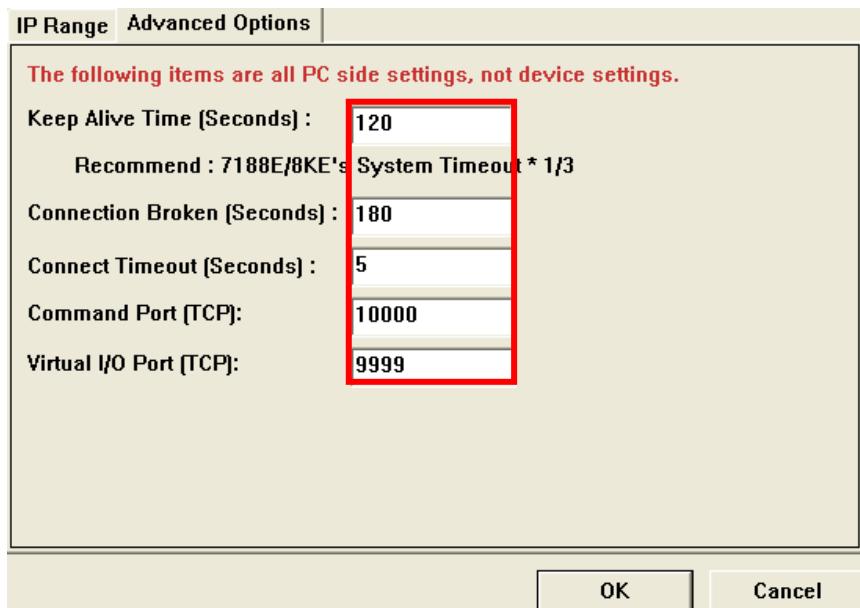


Step 7: Click “Restart Driver” to save the settings and then exit the VxComm Utility.



### 3.1. Advanced Options

In the advanced options, user can set “Keep Alive Time”, “Connection Broken”, “Connect Timeout”, “Command Port” and “Virtual I/O Port”.



Note:

#### Keep Alive Time (s):

After connecting to [7188E/8000E/PDS-700](#), [VxComm Driver](#) automatically and periodically sends commands to keep [7188E/8000E/PDS-700](#) alive. The timer is reset after each send/receive command/data success. The Keep-Alive mechanism doesn't work until the next timeout. The default setting of Keep-Alive time is about 120s. Its recommended setting is ([7188E/8000E/PDS-700's System Timeout \\* 1/3](#)) or smaller value.

#### Connection-Broken (s):

If the connection is broken, [VxComm Driver](#) tries to re-connect. When the client sends a message to [7188E/8000E/PDS-700](#), the internet (TCP/IP) layer may respond with a "Disconnect" event to [VxComm Driver](#) if it fails to send the message after 20 seconds or more. Users can set a smaller [Connection-Broken](#) time [for example: 180 s] to force [VxComm Driver](#) to re-connect again and get a quicker response.

If the connection has no sending/receiving signal before the [Connection-Broken](#) time has timed out, the connection will be marked as broken. [VxComm Driver](#) will also re-connect it again. Thus, the [Keep-Alive Time](#) should be smaller than the [Connection-Broken](#) time to make the connection come on-line.

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The default **System Timeout** (/STxxx) value of **7188E/8000E/PDS-700** is about 300 seconds. After client programs have connected to **7188E/8000E/PDS-700**, clients have to send command to keep **7188E/8000E/PDS-700** alive before it times out, otherwise **7188E/8000E/PDS-700** will reset itself and clients will have to reconnect to **7188E/8000E/PDS-700** again.

Users can set the **Keep-Alive Time** and **Connection-Broken** time to 0 to disable this mechanism. The System Timeout will have to be set to 0 to disable the reset mechanism.

#### Connect Timeout (s):

The timeout value will be passed into MS TCP/IP driver for reference when connecting and disconnecting.

#### Command Port [TCP]:

By default setting, **7188E/8000E/PDS-700** use TCP port **10000** as the Command/Configuration port. If you change **7188E/8000E/PDS-700**'s setting, you must assign the correct one in the field. So **VxComm Driver** can connect to the right TCP port.

This TCP port is used to configure the Baud rate, data format, CTS/RTS control mode and Break, etc.

#### Virtual I/O Port [TCP]:

By default setting, **7188E/8000E/PDS-700** use TCP port **9999** as the virtual I/O port. This TCP port is reserved.

## 4. Configuring COM port of the 7188E/8000E/PDS-700 server

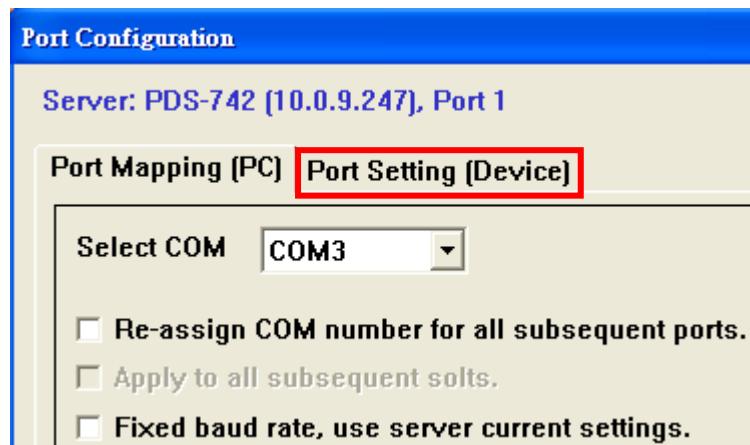
Users can use this feature to configure the Baud rate, data format of the COM port of 7188E/8000E/PDS-700 server. These settings will be saved in 7188E/8000E/PDS-700's EEPROM, and will be loaded to configure the port each time 7188E/8000E/PDS-700 starts up.

Step 1: Launch [VxComm Utility](#).

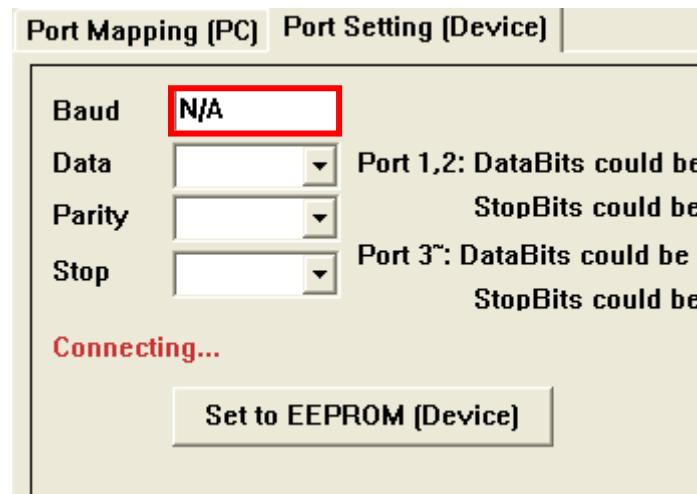
Step 2: Double-click on the port that you want to configure.

Configure Port		
Port	Virtual COM	Baudrate
Port I/O	COM2	N/A
Port 1	COM3	Dynamic
Port 2	COM4	Dynamic
Port 3	COM5	Dynamic
Port 4	COM6	Dynamic

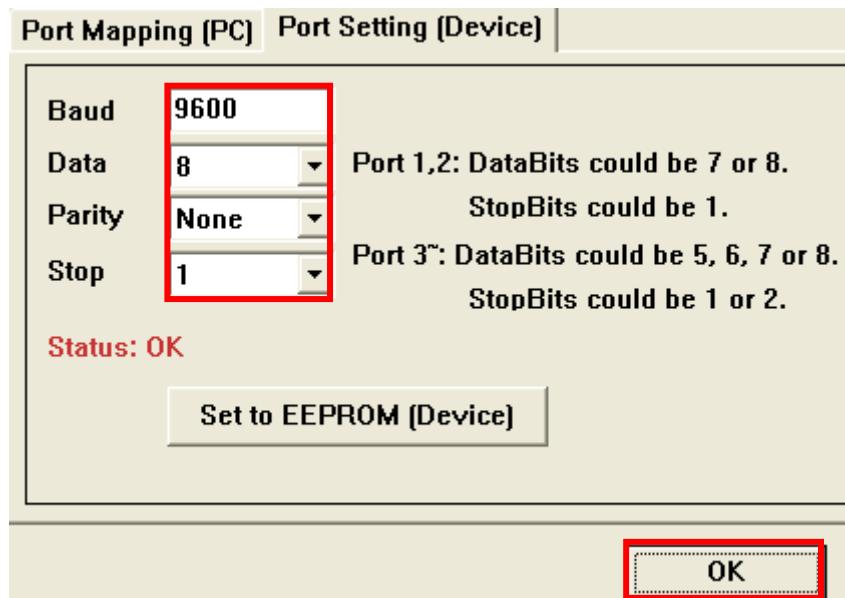
Step 3: After that "Port Configuration" window pops up, then select "Port Setting [Device]" page.



Step 4: In the "Port Setting [Device]" page [VxComm Utility](#) tries to connect to [7188E/8000E/PDS-700](#) server via TCP connection and gets the setting.



If there is something wrong or error occurred, the baud rate field shows "N/A". In this case, you may not be able to configure it.



If [VxComm Utility](#) gets the settings successful, the related fields show its setting value.

Step 5: After changing the setting click "OK" button.

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Step 6: “**VxComm**” message box pops up to make sure that you want to save the configuration into **7188E/8000E/PDS-700**'s EEPROM via TCP connection. Click “**Yes**” button to save it.

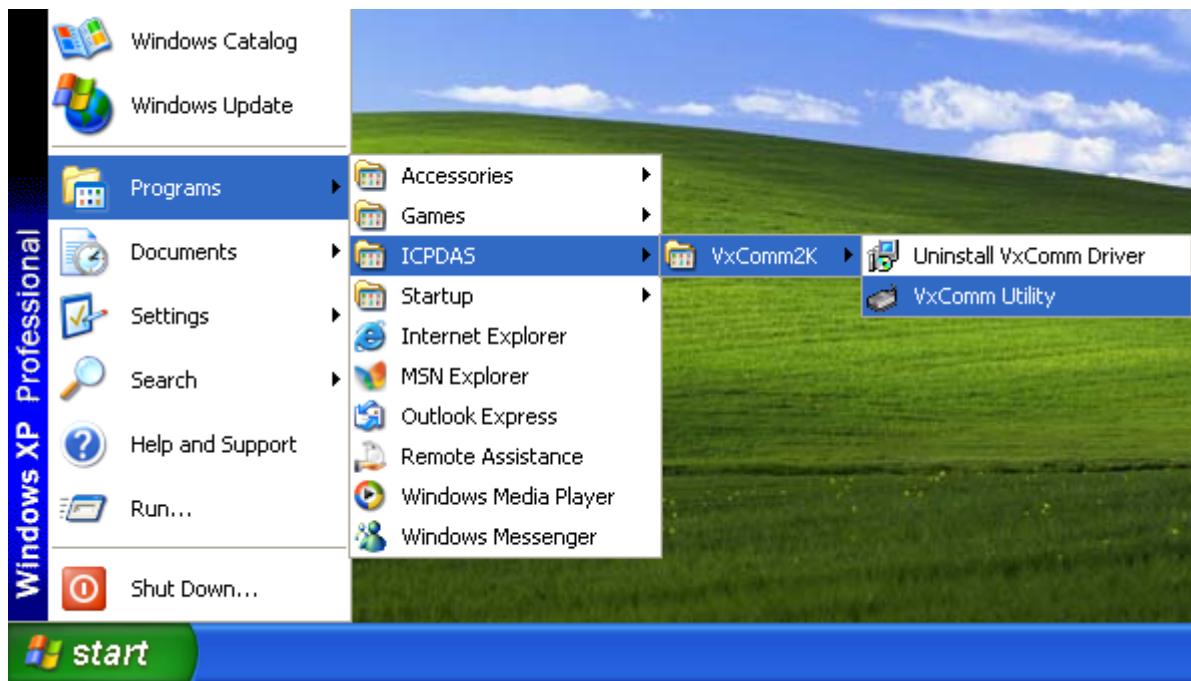


**Note:** **Port 1 and 2 support Data bits 7 and 8 and 1 stop bit.**

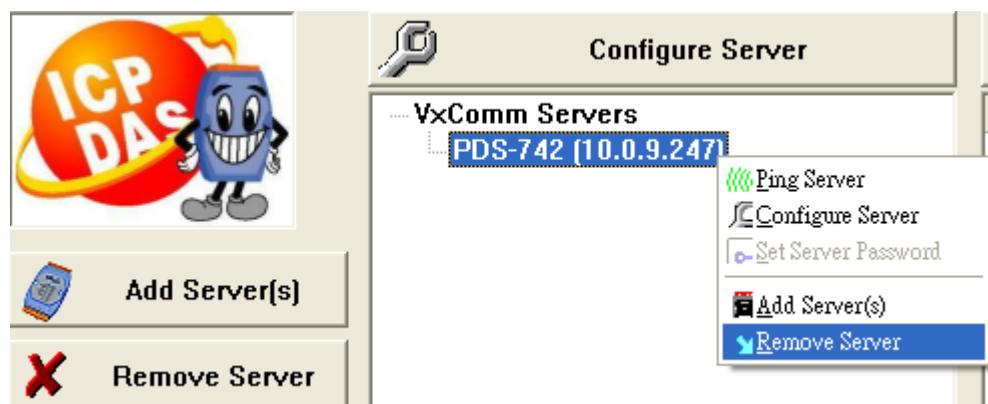
**Port 3 ... support Data bits 5, 6, 7 and 8 and Stop bits 1 and 2.**

## 5. Removing a 7188E/8000E/PDS-700 server

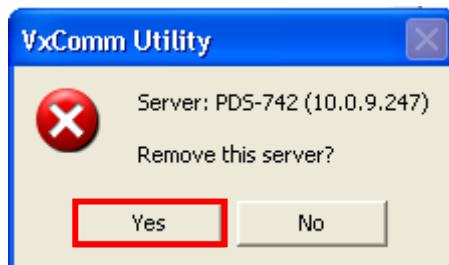
Step 1: Select "VxComm Utility".



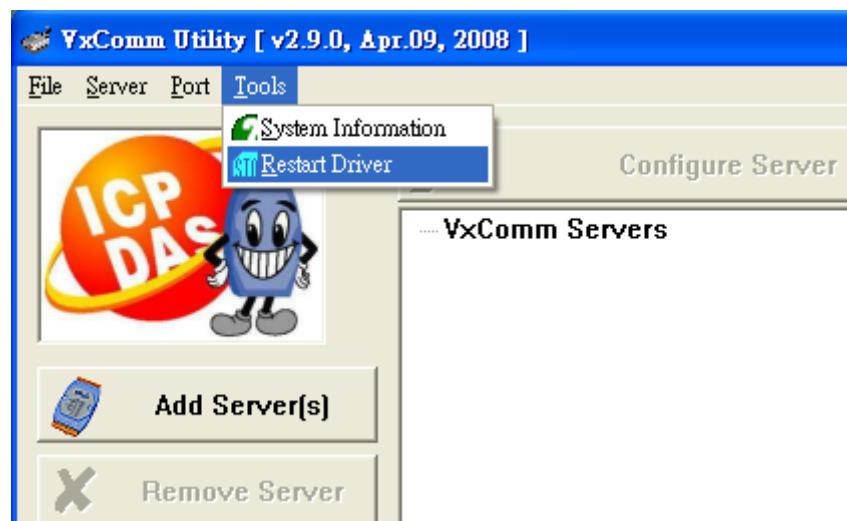
Step 2: Right-Click the server name you want to remove and select “Remove Server”.



Step 3: The following window will pop up, please make sure of your choice and press the "Yes" button to remove it.



Step 4: Select “Tools → Restart Driver”.

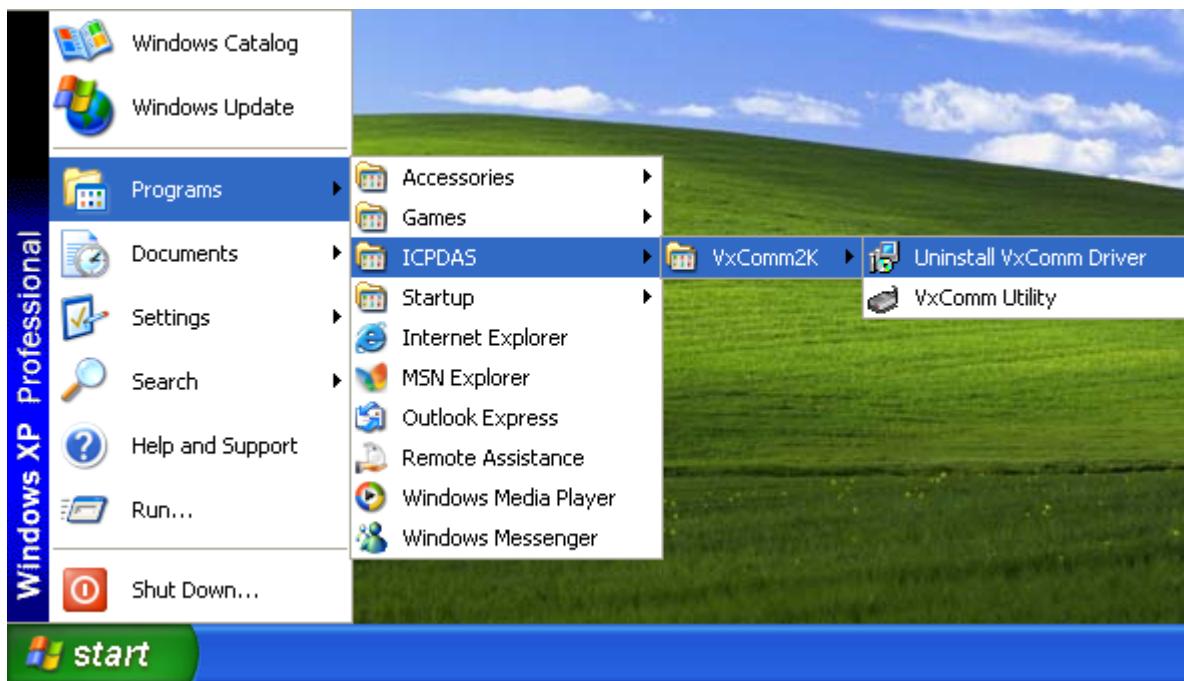


Step 5: Click “Restart Driver” to save the settings.

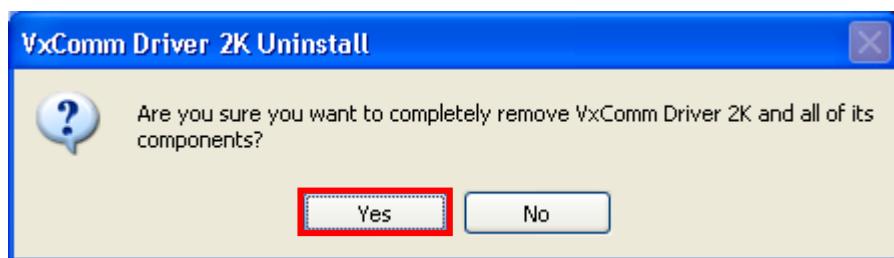


## 6. Uninstalling VxComm Driver

Step 1: Select “Uninstall VxComm Driver”.

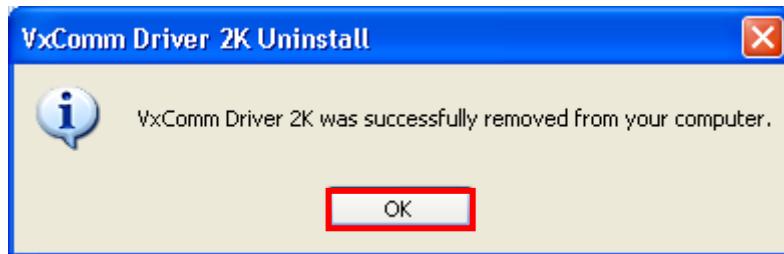


Step 2: “VxComm Driver 2K Unistall” message box pops up to make sure you want to uninstall. Click “Yes” button.



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Step 3: After uninstall “[VxComm Driver 2K Uninstall](#)” message box pops up to tell you that VxComm driver is successfully removed.



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# 7. Diagnostics & Trouble Shooting

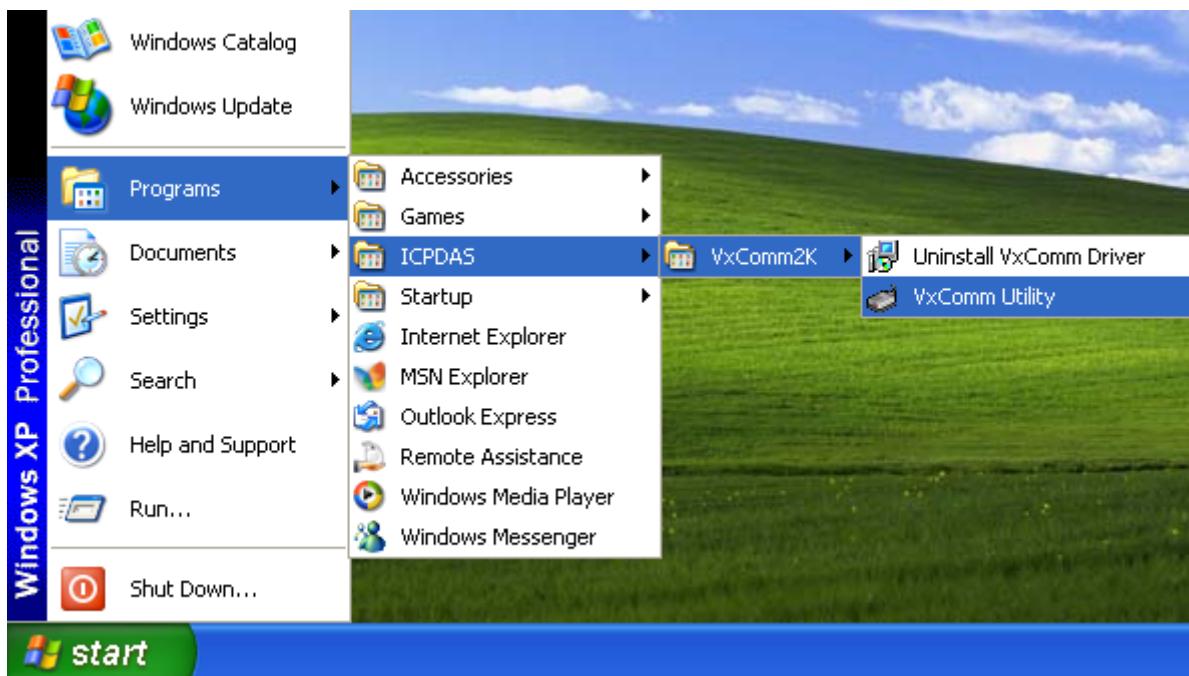
## 7.1. Diagnostics

After configuring [VxComm Driver](#) by using [VxComm Utility](#), [VxComm Driver](#) should work without error. However, users can use a simple test to make sure it's working properly.

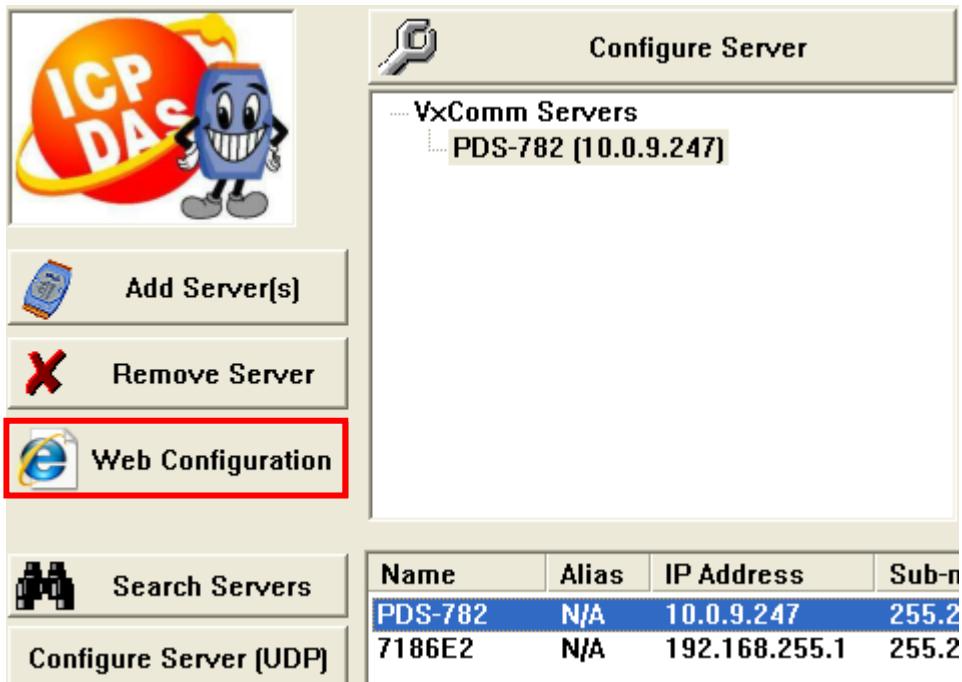
Note: The test method depends on the user's devices and client programs.

### 7.1.1. Loop-Back Test

Step 1: Select "[VxComm Utility](#)".



Step 2: Select your 7188E/8000E/PDS-700 device and click “Web Configuration” button.



Step 3: On the web configuration select “COM Port Setting” and “M0 (Transparent Mode)”. Click “SET COM PORT” button.

Other Setting	Current	New
Operation Mode	M1(Slave Mode)	<input checked="" type="radio"/> M0(Transparent Mode) <input type="radio"/> M1(Slave Mode)
Slave Mode Timeout(ms)	100	<input type="text"/>
Master ACK Timeout(ms)	0	<input type="text"/>

**SET COM PORT**

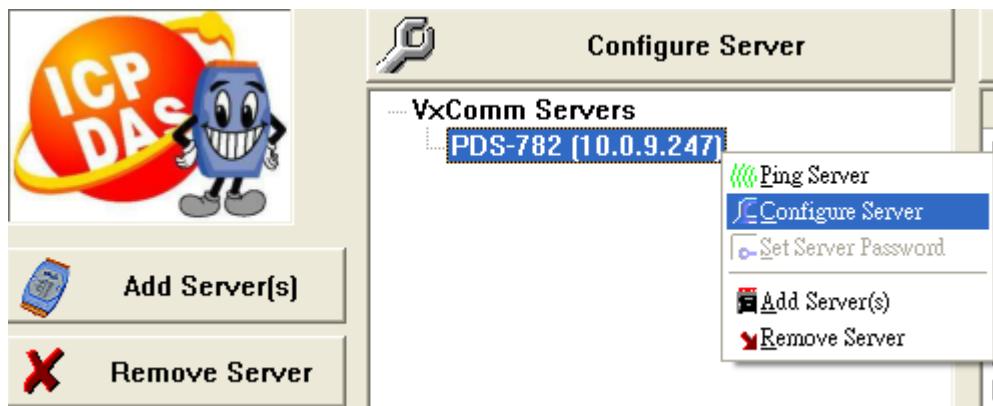
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**M0** : Shared mode. Each client of the port shares/gets the same data.

**M1** : Non-shared mode. Each client of the port gets the data only after it send out a request. Other clients will not get the data.

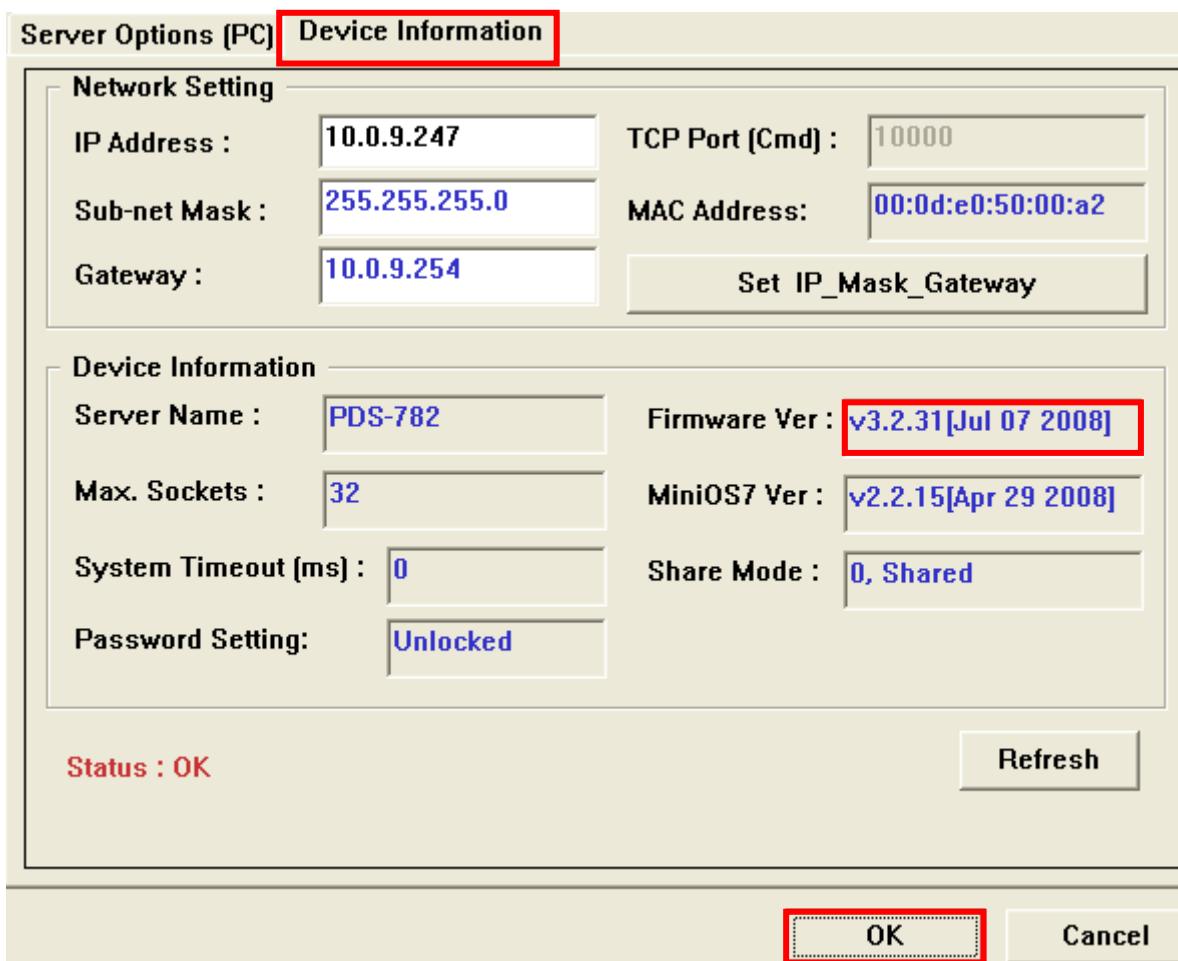
(For more information, please refer to [7188E/8000E/PDS-700](#) user's manual.)

Step 4: Right-Click your [7188E/8000E/PDS-700](#) device and select “[Configure Server](#)”.



Step 5: Select “[Device Information](#)” page. If “[Share Mode](#)” working on the “[0, Share](#)”, please go to step 6. If “[Share Mode](#)” working on the “[1, Non-share](#)”, please go back to step 3.

Step 6: Make sure the “Share Mode” working on the “0, Share” mode. Click “OK” button to exit the “Server Configuration”.



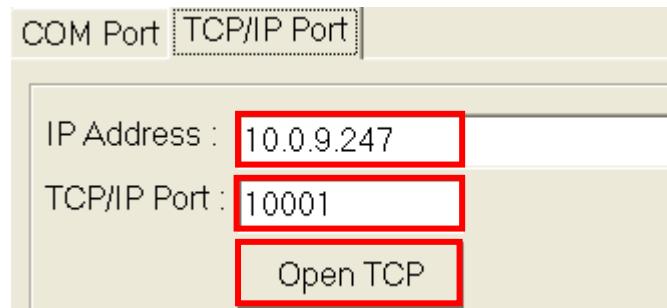
Step 7: Wiring the TXD1 with the RXD1 (Port 1) of 7188E/8000E/PDS-700

Step 8: Right-Click Port 1 and select “Open TCP Port”.

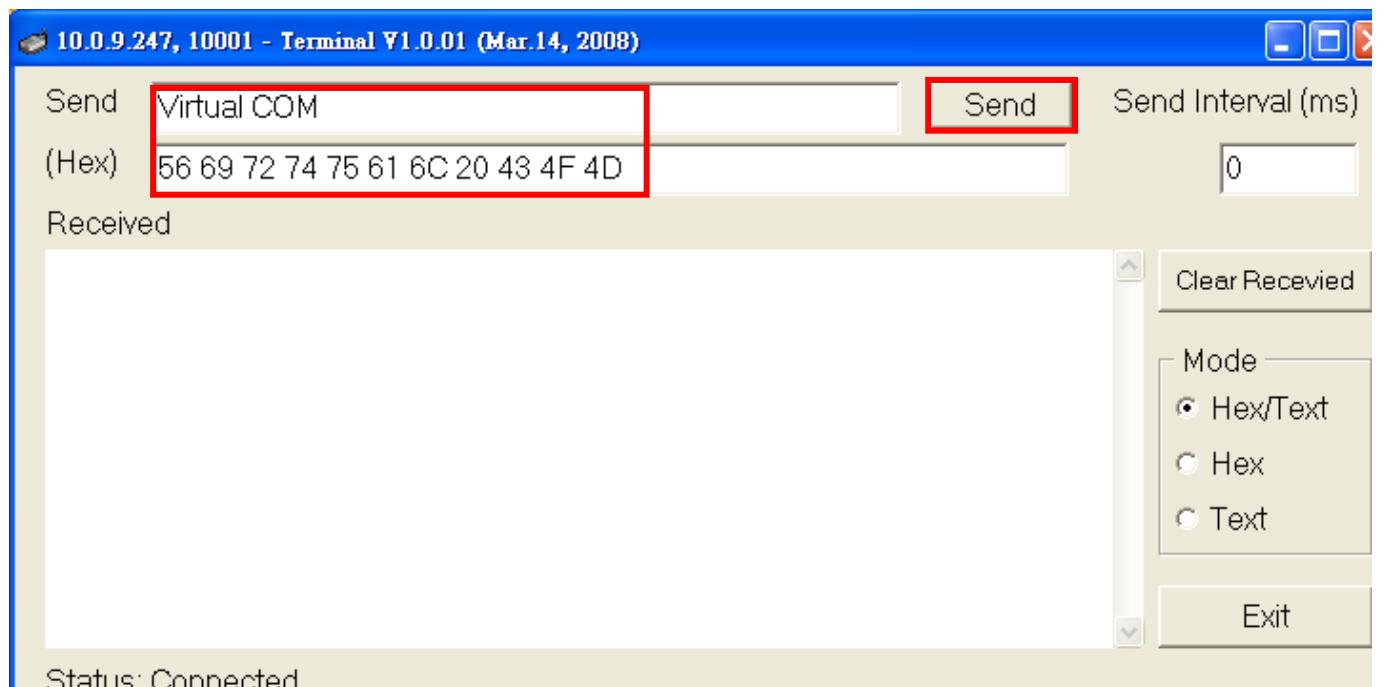
The screenshot shows a table of port configurations in the VxComm Utility. The table has columns for Port, Virtual COM, and Baudrate. Port 1 is selected and a context menu is open, showing options: Configure Port, Open COM Port, and Open TCP Port. The 'Open TCP Port' option is highlighted with a red box.

Port	Virtual COM	Baudrate
Port I/O	Reserved	N/A
Port 1	COM3	Dynamic
Port 2	COM4	Dynamic
Port 3	COM5	Dynamic
Port 4	COM6	Dynamic
Port 5	COM7	Dynamic
Port 6	COM8	Dynamic
Port 7	COM9	Dynamic
Port 8	COM10	Dynamic

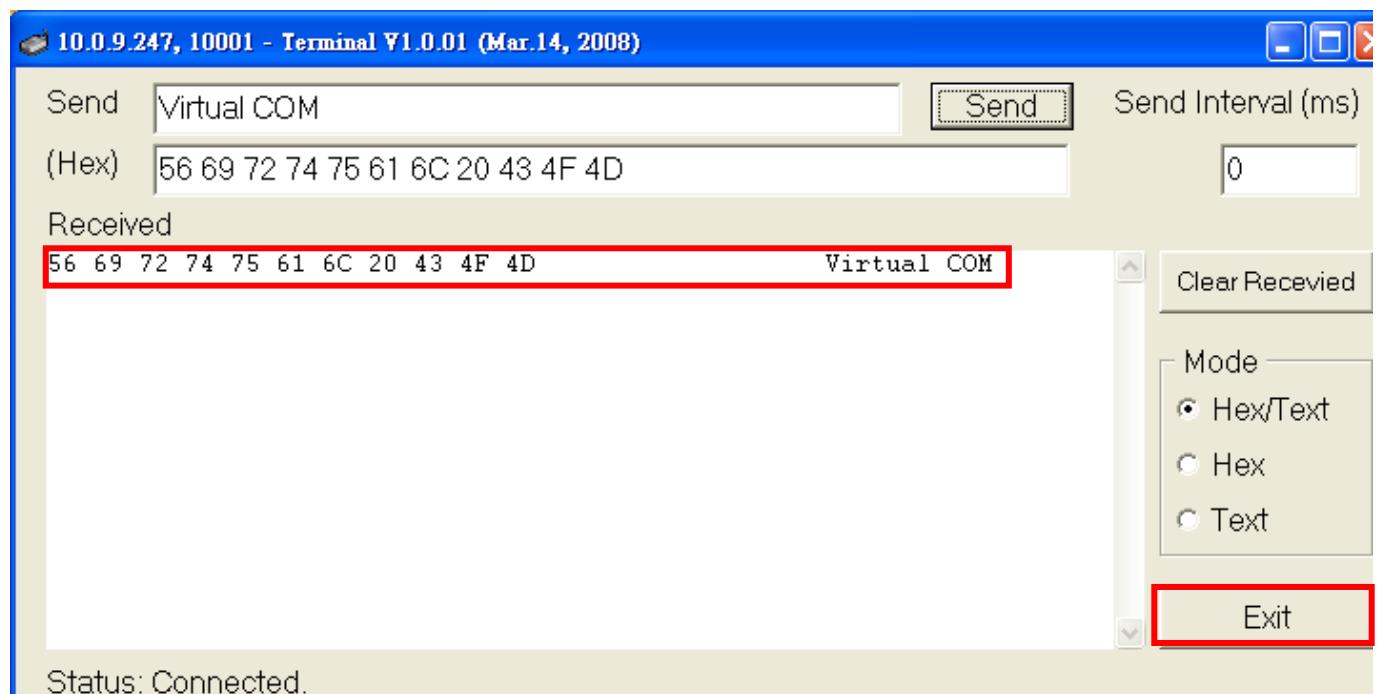
Step 9: Select “IP Address” and “TCP/IP Port” settings and then click “Open TCP” button.



Step 10: Type in some characters in the **Send** text box, and then click “Send” button.



Step 11: Make sure the characters in the **Received** list box are the same with **Send** text box.  
And the click “**Exit**” button.

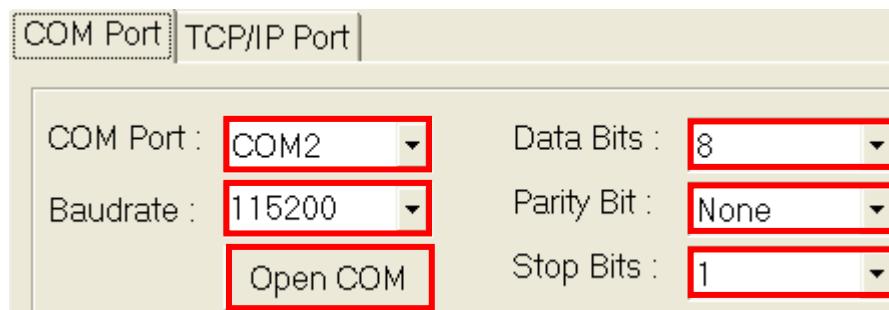


Step 12: Right-Click Port 1 and select “**Open COM Port**”.

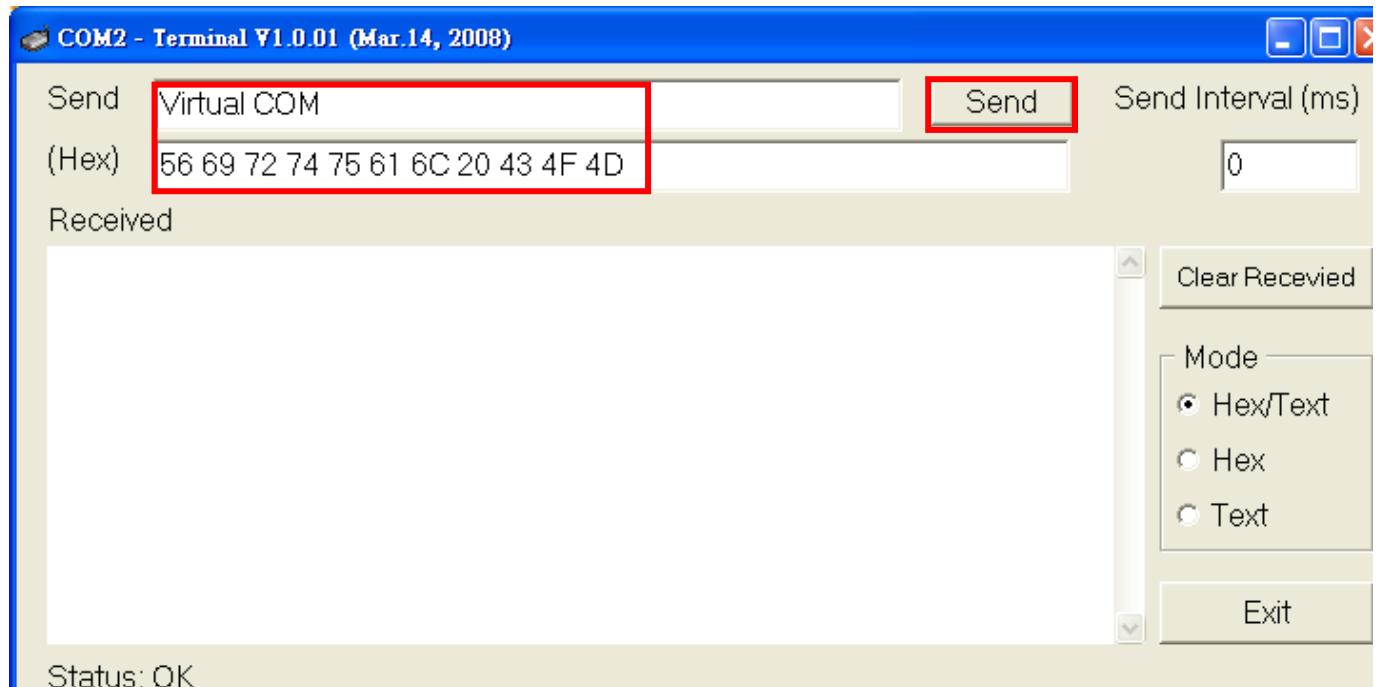
Port	Virtual COM	Baudrate	
Port I/O	Reserved	N/A	
Port 1	COM3	Dynamic	<ul style="list-style-type: none"><li>Configure Port</li><li><b>Open COM Port</b></li><li>Open TCP Port</li></ul>
Port 2	COM4	Dynamic	
Port 3	COM5	Dynamic	
Port 4	COM6	Dynamic	
Port 5	COM7	Dynamic	
Port 6	COM8	Dynamic	
Port 7	COM9	Dynamic	
Port 8	COM10	Dynamic	

---

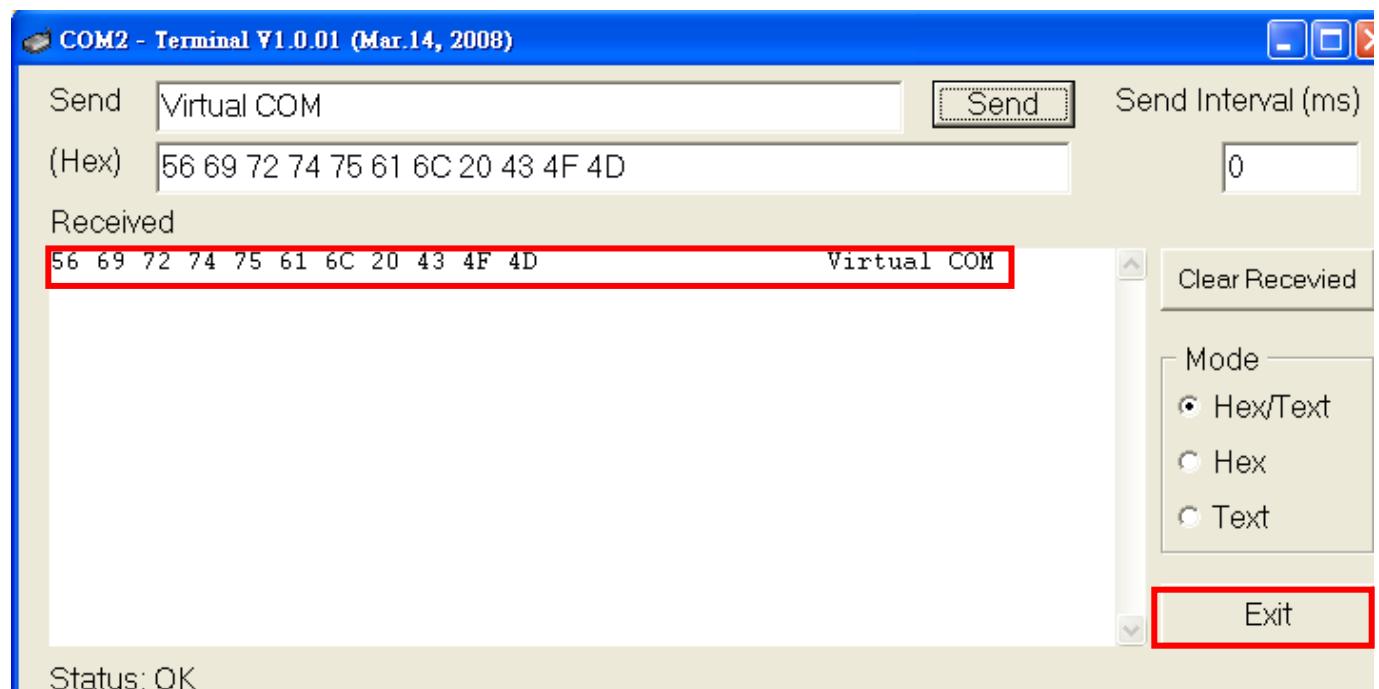
Step 13: Select “**COM Port**”, “**Baudrate**”, “**Data Bits**”, “**Parity Bit**” and “**Stop Bits**” settings and then click “**Open COM**” button.



Step 14: Type in some characters in the **Send** text box, and then click “**Send**” button.



Step 15: Make sure the characters in the **Received** list box are the same with **Send** text box.  
And the click “**Exit**” button.



## 7.1.2. External-Devices Test

Connect a PDS-700 Programmable Device Series module to an I-7000 Series module.

PDS-700		I-7000
DATA+	↔	DATA+
DATA-	↔	DATA-

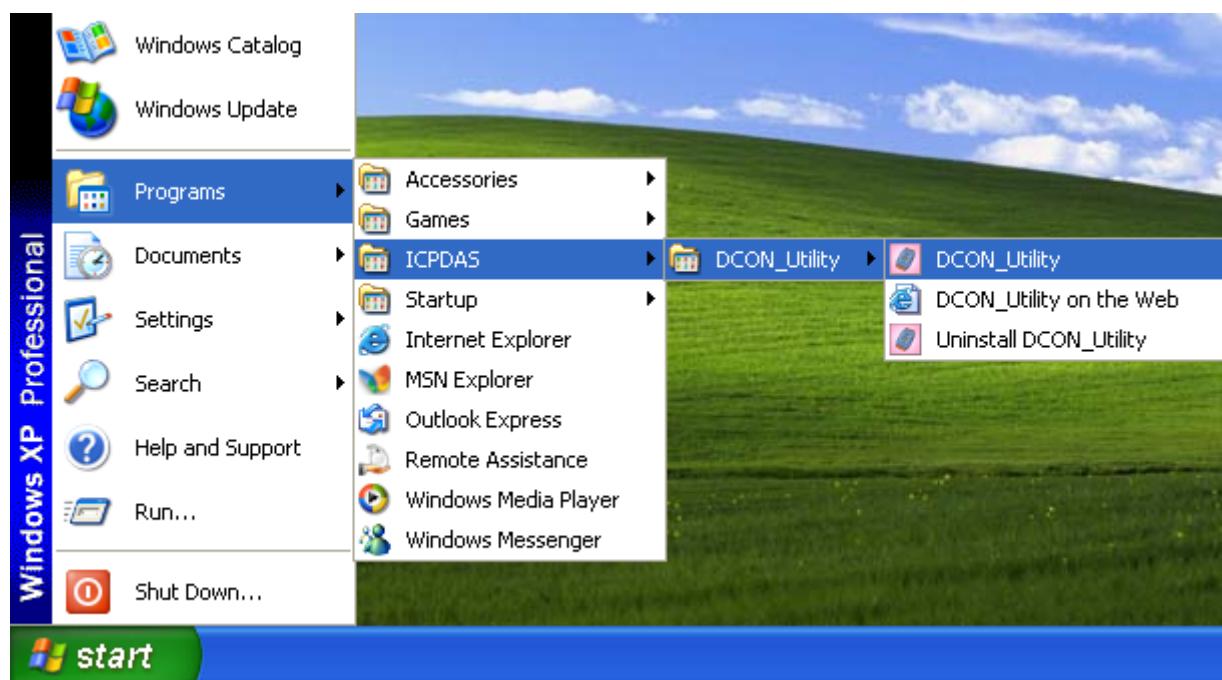
VxComm Driver uses the COM3~COM10 to map to PDS-782's 8 ports. Thus, we can use the [DCON Utility](#) to search 7000 series module through COM4 (RS-485, Port 2 of PDS-782).

Note:

Users have to install the [DCON Utility](#) first from the CD-ROM

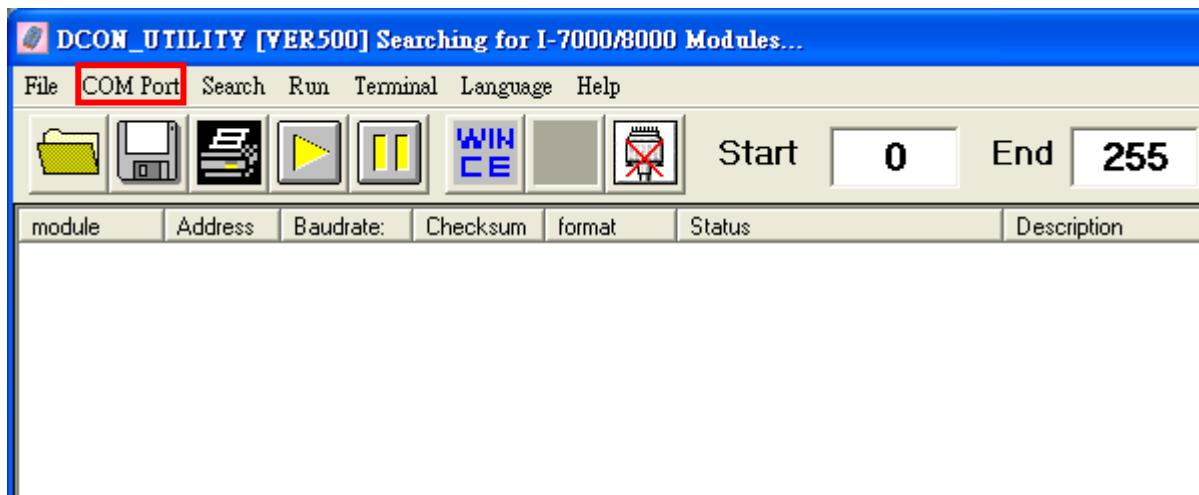
Drive: \Napdos\Driver\DCON\_Utility\setup

Step 1: Run [DCON Utility](#) from the menu "Start → Programs → ICPDAS → DCON\_Utility → DCON\_Utility".

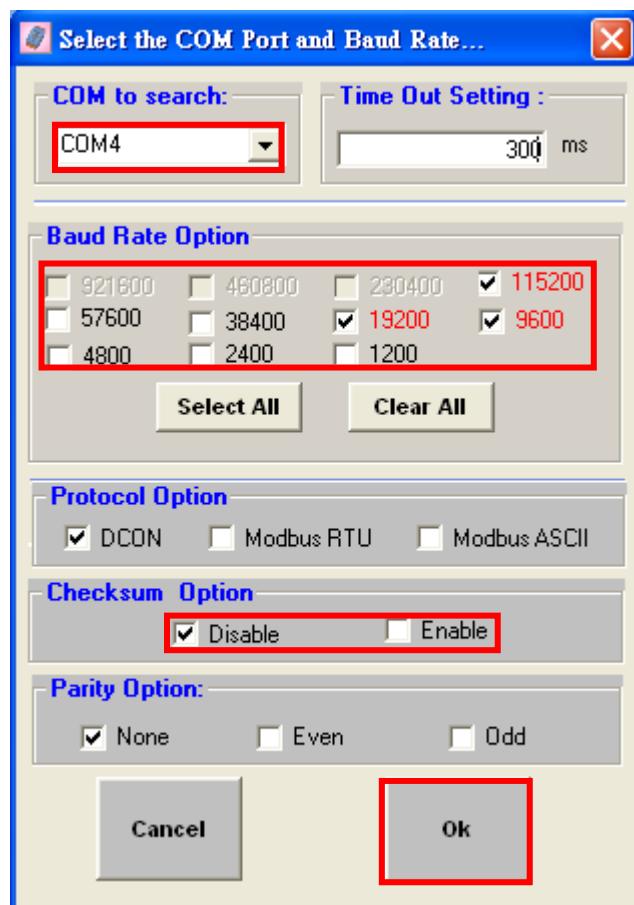


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Step 2: Click the menu item "COM Port".



Step 3: Choose the COM port number, baudrate, and checksum. For example: COM4 (RS-485 port), 115200, 19200, 9600 and Disable Checksum. (These settings depend on your module's settings.) And then press the "OK" button.



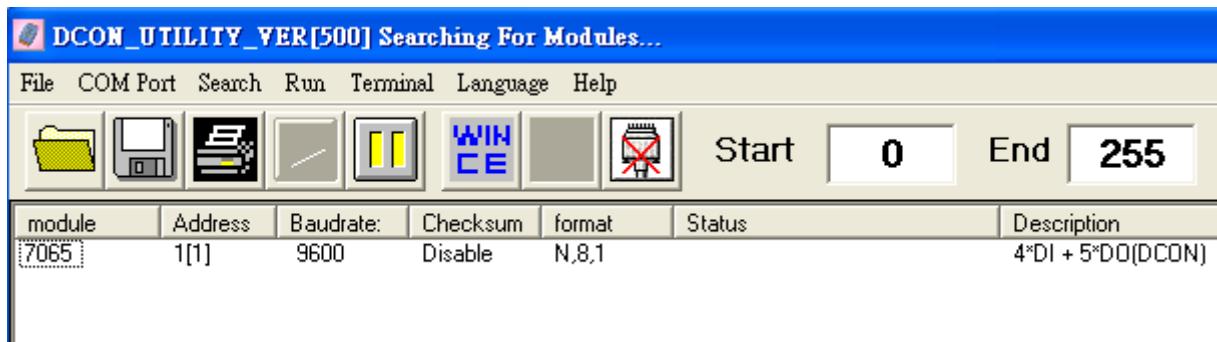
---

Note:

When working with Ethernet/Internet, sometimes there may have a little delay in the network. So, that would be better to set the timeout value to a larger one. This setting is depends on your network loading.

Step 4: Click the  search icon.

Step 5: If it shows the module name on the window **VxComm Driver** works well and the module(s) has been found.



## 7.2. Trouble Shooting

### 7.2.1. Client program fail to open the COM port that was created by VxComm Driver.

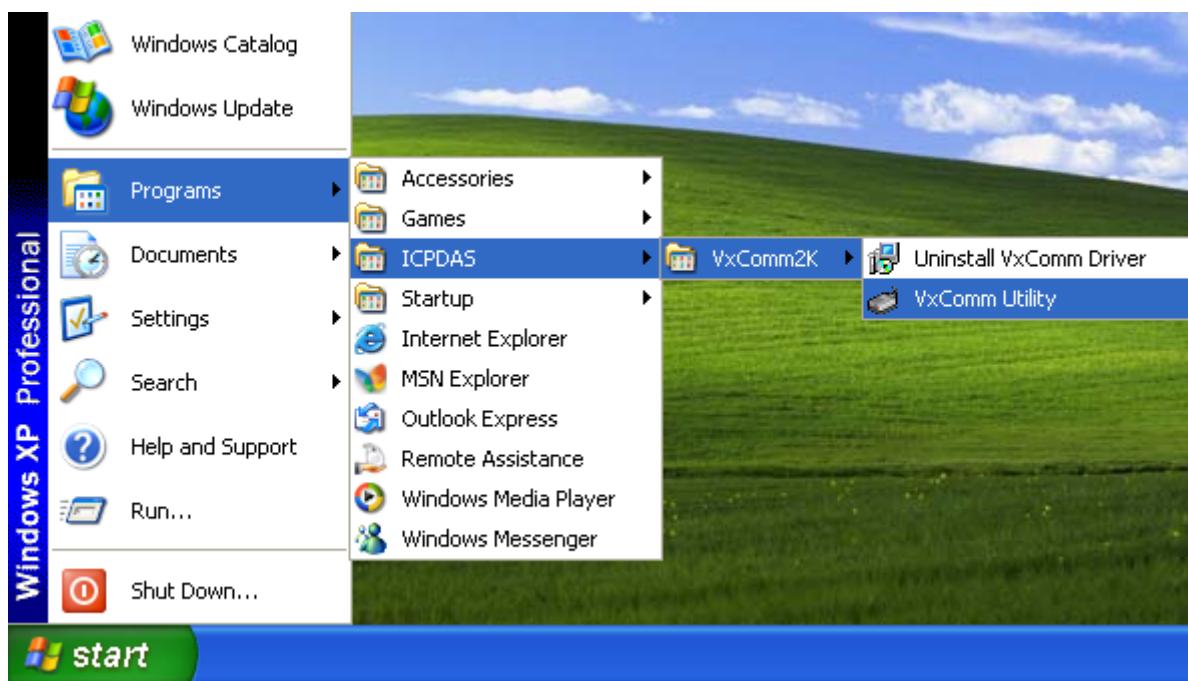
Check:

7188E/8000E/PDS-700's power supply, network cable, IP address, subnet-mask, gateway.  
(Please refer to [7188E/8000E/PDS-700](#) user's manual for more information.)

### 7.2.2. Client program still fails to open the COM port.

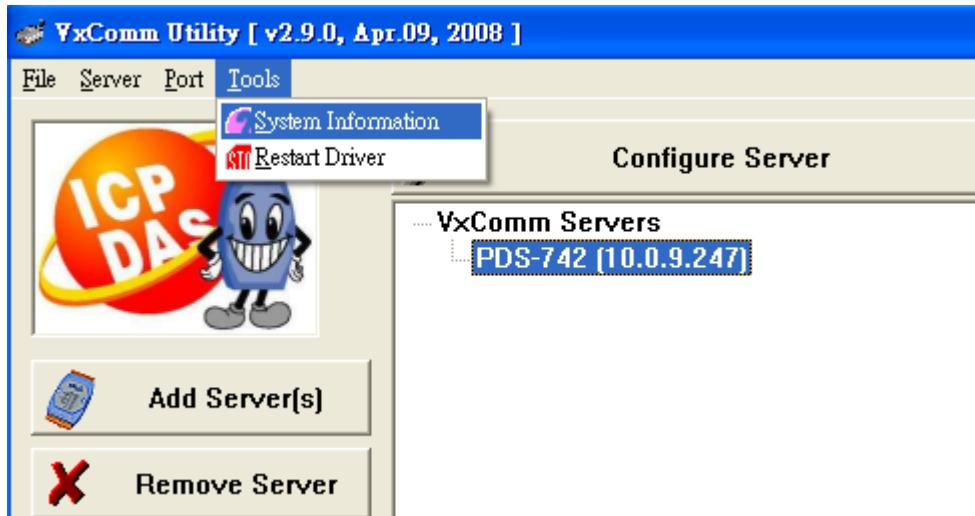
Check:

Step 1: Make sure now is administrator account and then installs/sets driver. Select "[VxComm Utility](#)".

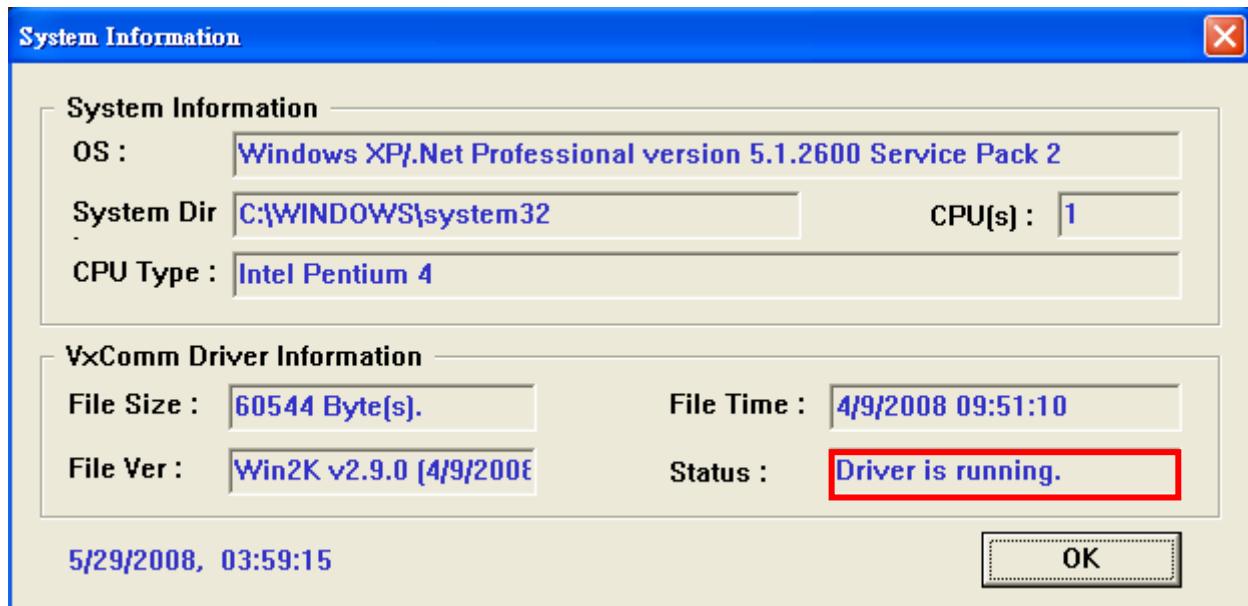


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Step 2: Select “[Tools](#) → [System Information](#)”.



Step 3: Make sure the [Status](#) shows “[Driver is running.](#)” If the status does not work properly, please restart driver first. If the status still doesn’t work properly, please remove the driver and then re-install and configure it again.



### 7.2.3. Client programs open the COM port with success, but fail to access the device.

Check:

Please check the device's power supply and wiring (RS-232: RXD, TXD; RS-485: D+, D- ; GND ...)

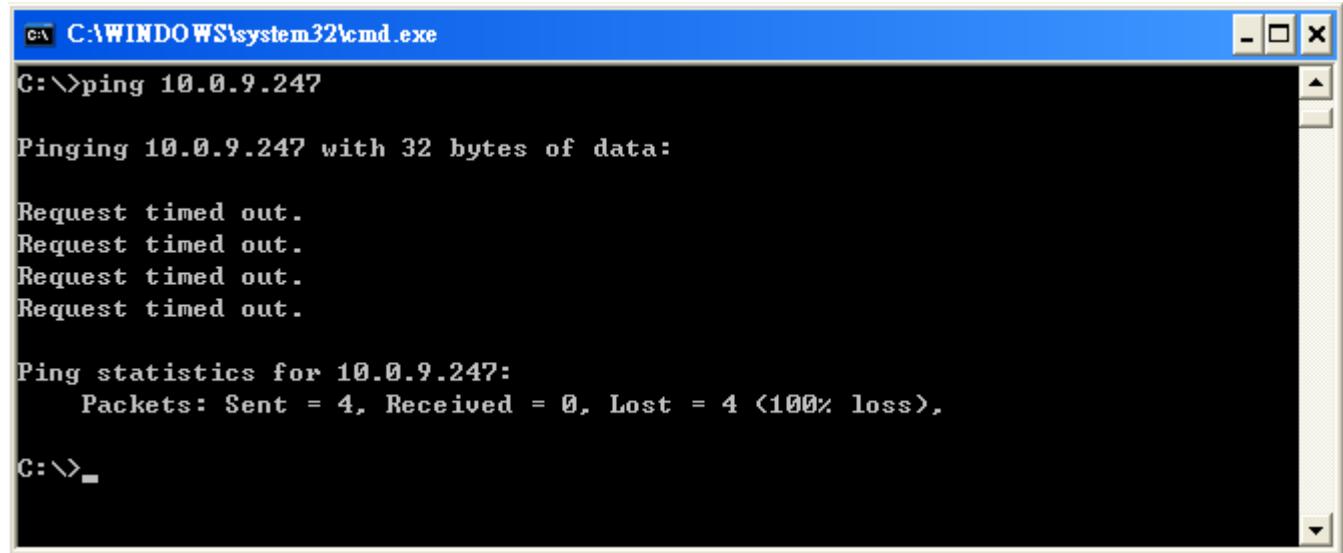
---

#### 7.2.4. Make sure the IP address is not currently being used by other devices

Check:

	PDS Offline	PDS Online
Ping Timeout (No reply)	OK. No IP address conflict with other device.	Failure! The PDS does not work, Ethernet cable does not plug well or network has problem too.
Ping Success (Replies)	Failure! There is another device using the same IP address and causes IP conflict.	OK. The PDS is alive and gives responses to Ethernet communication.

Step 1: Remove (or power off) [7188E/8000E/PDS-700](#) from the network and ping the IP address of [7188E/8000E/PDS-700](#).

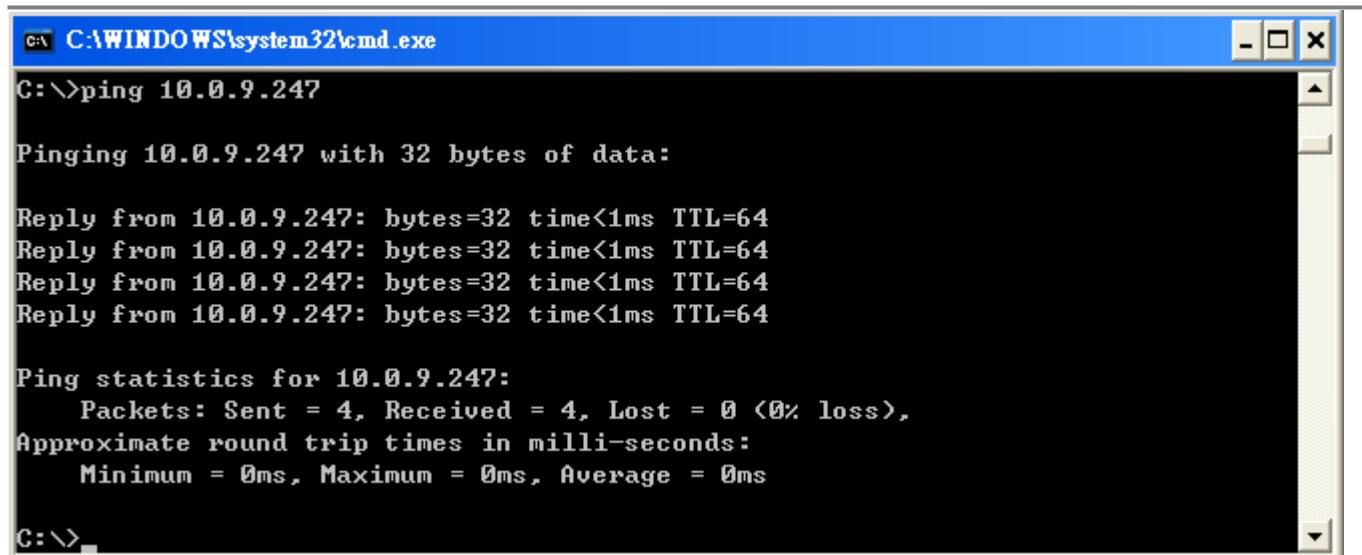


```
C:\WINDOWS\system32\cmd.exe
C:\>ping 10.0.9.247

Pinging 10.0.9.247 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.9.247:
  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>_
```

The IP address is not being used by any devices if the "ping" program shows "Request timed out" message.



```
C:\WINDOWS\system32\cmd.exe
C:\>ping 10.0.9.247

Pinging 10.0.9.247 with 32 bytes of data:

Reply from 10.0.9.247: bytes=32 time<1ms TTL=64

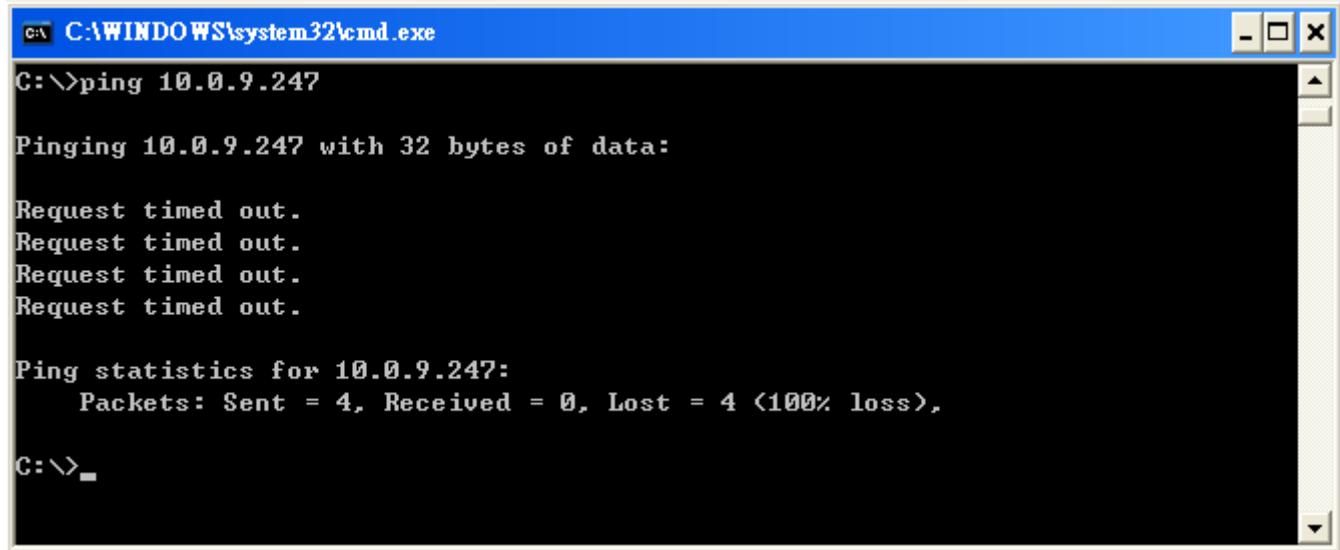
Ping statistics for 10.0.9.247:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

The IP address is being used by someone if it shows "Reply from ...." message.

If the IP address is being used, please refer to [7188E/8000E/PDS-700 User's Manual](#) to change [7188E/8000E/PDS-700](#)'s IP address to prevent future conflicts.

Step 2: Make sure you connect [7188E/8000E/PDS-700](#) hardware to the network and use the "Ping" program to test it.



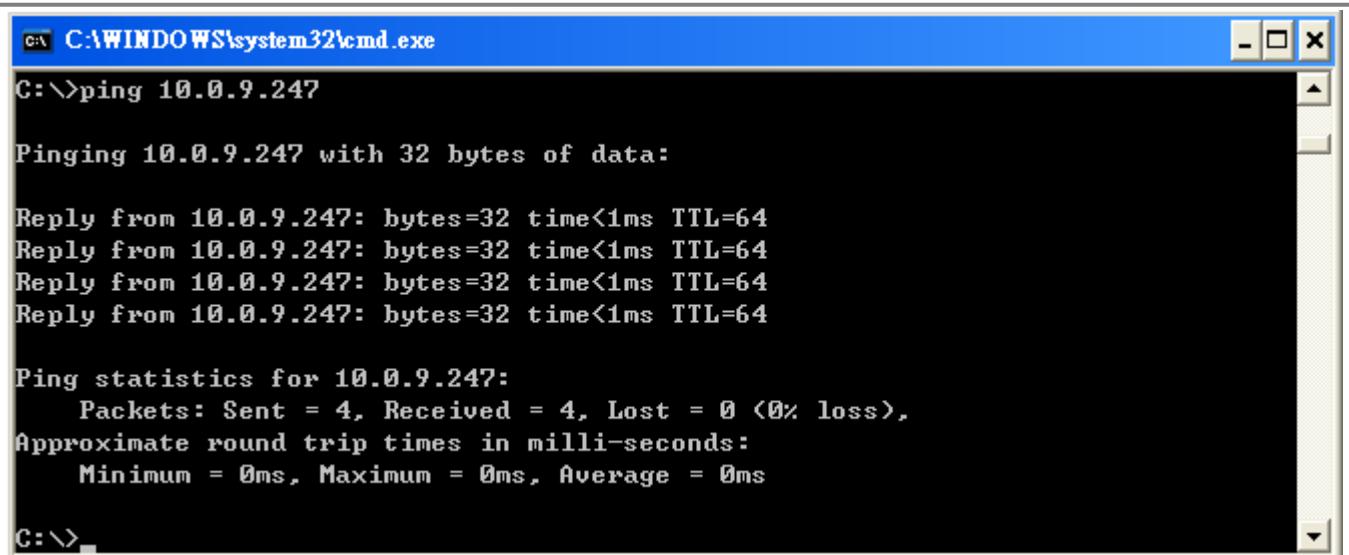
```
C:\WINDOWS\system32\cmd.exe
C:\>ping 10.0.9.247

Pinging 10.0.9.247 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.9.247:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
```

Host failed to ping (connect) [7188E/8000E/PDS-700](#) if it shows "Request timed out". Please check the power, network cable, network settings (IP, Subnet Mask and Gateway...) and refer to [7188E/8000E/PDS-700 User's Manual](#).



C:\>ping 10.0.9.247

Pinging 10.0.9.247 with 32 bytes of data:

Reply from 10.0.9.247: bytes=32 time<1ms TTL=64  
Reply from 10.0.9.247: bytes=32 time<1ms TTL=64  
Reply from 10.0.9.247: bytes=32 time<1ms TTL=64  
Reply from 10.0.9.247: bytes=32 time<1ms TTL=64

Ping statistics for 10.0.9.247:  
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>

OK!! We connect to [7188E/8000E/PDS-700](#) if the "Ping" program shows "Reply from ....." message.

---

## 7.2.5. Make sure IP Address, Gateway and Subnet Mask proper for your network.

### Check:

7188E/8000E/PDS-700's default IP address is **192.168.255.1** (Factory setting). If the setting (**IP Address**, **Gateway** and **Subnet Mask**) is not proper for your network, please contact your network administrator to get a valid network configuring for the PDS. And then refer to 7188E/8000E/PDS-700 User's Manual for configuration the network setting of your 7188/8000E/PDS device. Wrong setting will cause problems on communication between the module and your network.

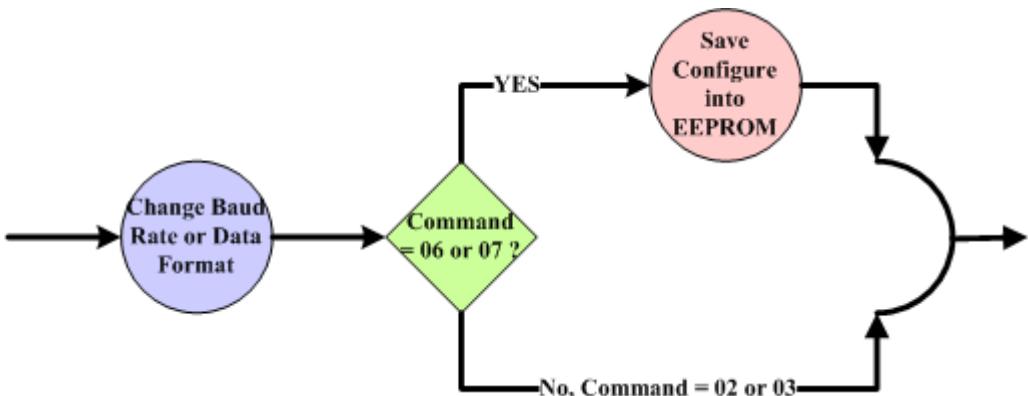
# 8. VxComm Driver FAQ

Last Update: June-11-2008

## 8.1. Does VxComm Driver (PC) v2.00 work with VxComm Server v2.6.00?

No, please upgrade the [VxComm Server](#) to version 2.6.14 or latest version. The [VxComm Server \(7188E/8000E\)](#) v2.6.00 uses the "06" and "07" command to change the baudrate and the data format and then saves these configurations in EEPROM.

The newer version adds the "02" and "03" command to change the baudrate and data format without saving. These two commands improve the performance when changing baudrate and data format.



The [VxComm Driver](#) (PC) also changed to use new commands. Thus, users have to upgrade their [VxComm Server \(7188E/8000E/PDS-700\)](#) to the latest version.

## 8.2. Does VxComm Driver (PC) support auto-reconnection after fixing a network break?

Yes, the [VxComm Driver](#) (PC) supports the auto-reconnection mechanism after version 2.00. The [VxComm Utility](#) allows user to set the server-options that include Keep-Alive Time (ms) and Connection-Broken time (ms).

Please refer to the "[Adding a 7188E/8000E/PDS-700 server and configuring the VxComm Driver](#)" section of the [VxComm Driver](#) online help file.

### 8.3. Why can't VxComm Driver (PC) receive data from 7188E/8000E/PDS-700?

Please make sure [7188E/8000E/PDS-700](#) works in mode 0. (/m0)

[7188E/8000E](#) has the following two modes for communication:

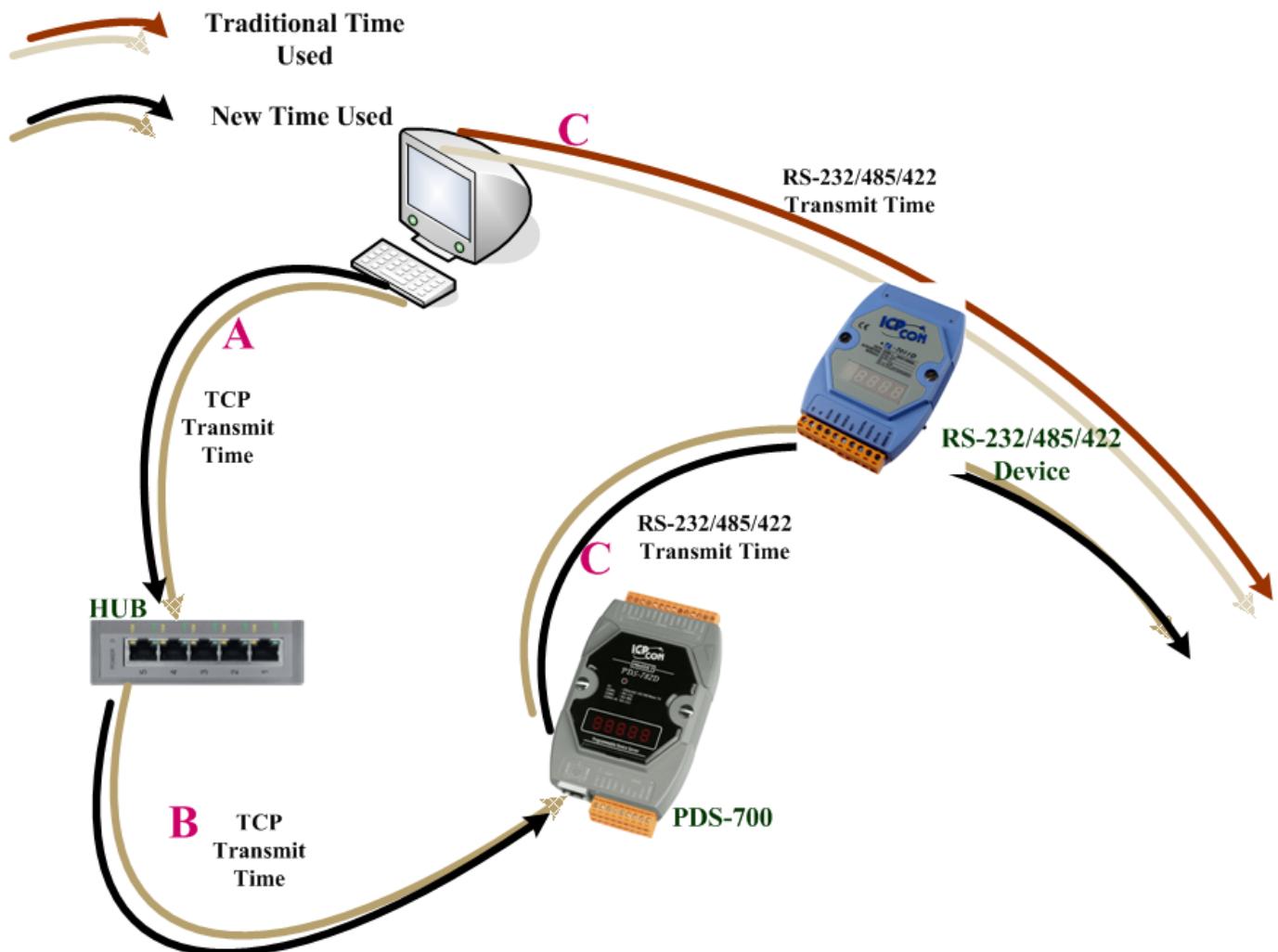
	<b>Transparent Mode (Multi-echo, shared).</b> <b>/M0</b> Echoes data from 7188E/8000E/PDS-700's COM ports to every client which is connected to 7188E/8000E/PDS-700.	
	<b>Slave Mode (Single-echo, Non-Shared).</b> <b>/M1</b> Echoes data from 7188E/8000E/PDS-700's COM ports to the specific client which requested the service.	After version 2.6.12

In the /M1 mode, if the client does not send a request to the COM port of [7188E/8000E/PDS-700](#), then [7188E/8000E/PDS-700](#) won't return any data to it. For more information, please refer to [7188E/8000E/PDS-700](#) user's manual.

Other reasons causing the problem may be: **incorrect wiring, power, IP conflict, MAC conflict, wrong subnet-mask and invalid IP address**. Please also refer to the "[Diagnostics and Trouble Shooting](#)" section of [VxComm Driver](#) online help file.

## 8.4. Does a RS-232/485/422 device become faster while working on Internet/Ethernet?

It depends on your application. For the traditional RS-232/485/422 application, it may become slower.

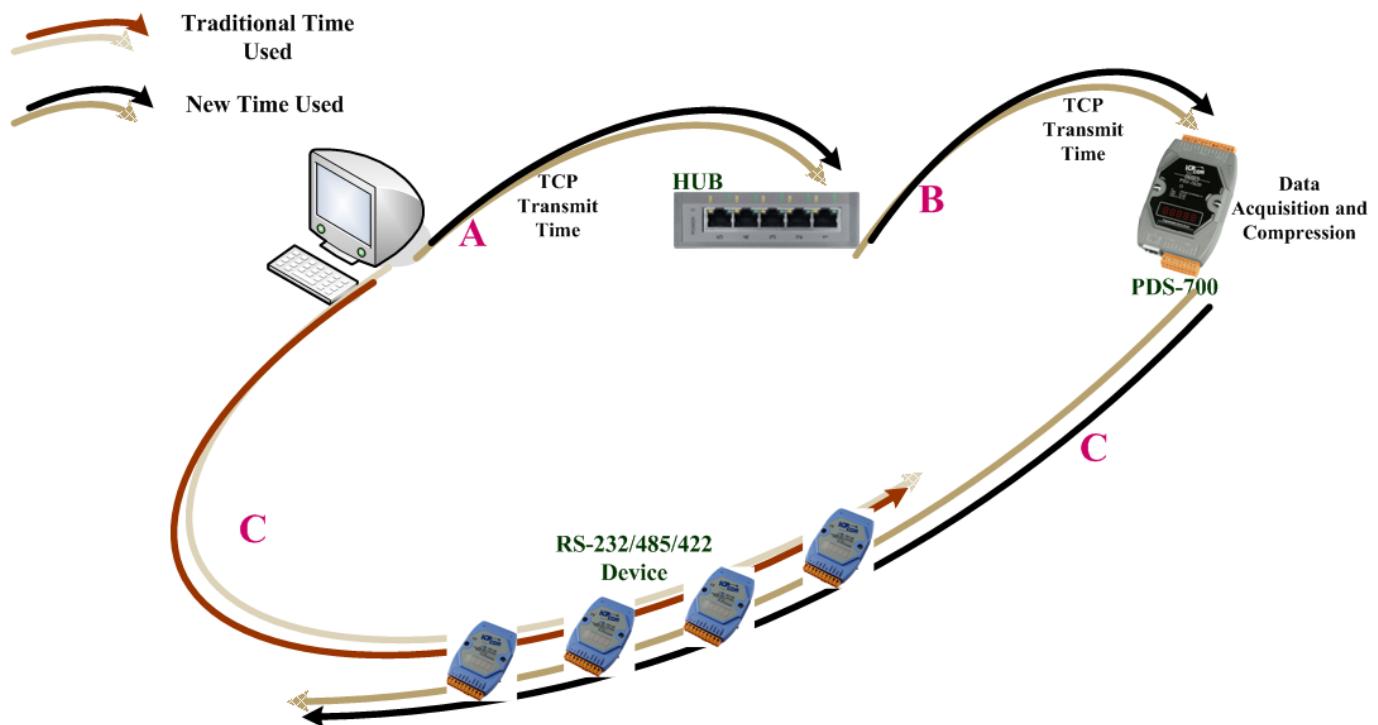


Traditional time used: RS-232/485/422 transmit time (C)

New time used: Internet/Ethernet transmit time + RS-232/485/422 transmit time (A+B+C)

(All of the TCP packets need an extra ACK packet to commit the transmit action. This also causes a little delay in the communication. )

For the [Xserver](#) application, it may become faster. Users can write their own [Xserver](#) application to acquire and compress data, and then transmit this large amount of data at one time to receive better performance.



Traditional time used: RS-232/485/422 transmit time ( $C * n$  modules)

New time used: Internet/Ethernet transmit time ( $A + B + C$ )

For more information, please refer to the [7188E/8000E/PDS-700](#) user's manual.

## 8.5. Why does the 7188E/8000E/PDS-700 work fails on (public) Internet?

The default IP address of 7188E/8000E/PDS-700 is 192.168.255.1, which can be only used on a private internet. A private network packet would not be routed onto (public) Internet. That is the reason why 7188E/8000E/PDS-700 failed on the Internet.

*The IANA has reserved three address spaces for private internets (RFC1918).*

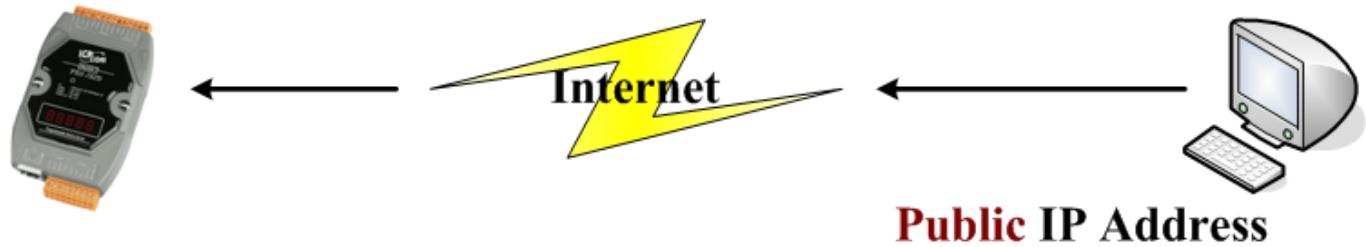
*10.0.0.0 - 10.255.255.255 (10/8 prefix)*

*172.16.0.0 - 172.31.255.255 (172.16/12 prefix)*

*192.168.0.0 - 192.168.255.255 (192.168/16 prefix)*

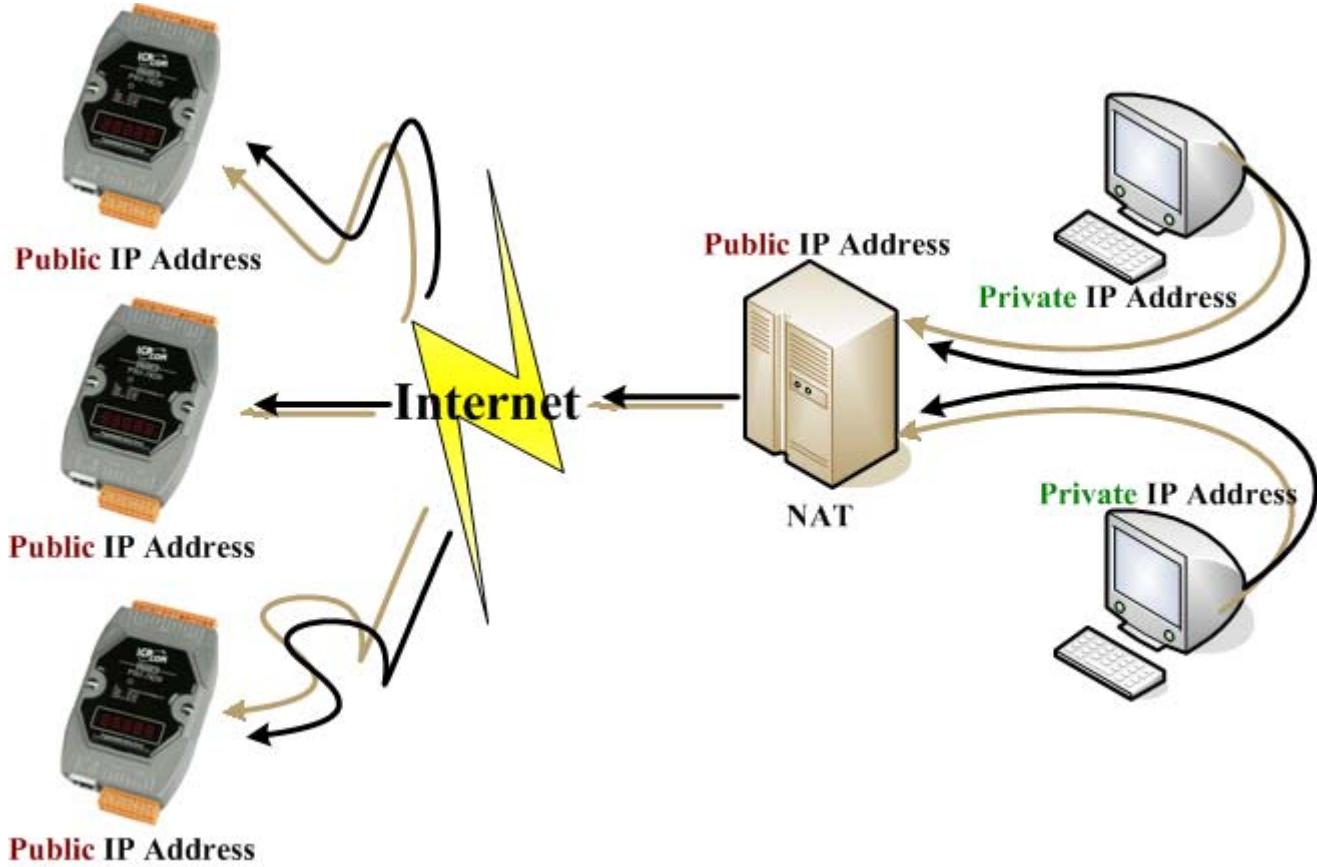
7188E/8000E/PDS-700 can work on the Internet with a legal public IP address. That address can be obtained from your ISP or network administrator.

### Public IP Address



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A private internet client may communicate to a public internet server (7188E/8000E/PDS-700) if the NAT service is available for the client.



Note:

*IANA stands for "Internet Assigned Numbers Authority".*

*RFC stands for "Request for Comments".*

*ISP stands for "Internet Service Providers".*

*NAT stands for "Network Address Translator".*

## 8.6. Can SetCommState( ) API change the baud rate/data bits/parity/stop bits?

Yes. In Win32 environment, users should call the CreateFile( ) API to open the COM port(s) and then use the SetCommState( ) API to configure it.

Third-party tools may provide an OpenCom( ) function for the easy opening of COM ports. In actuality, they must use the CreateFile( ) and SetCommState( ) APIs to implement these kinds of functions.

## 8.7. How many PCs can be connected to one 7188E/8000E/PDS-700 device?

It depends on how many serial ports on 7188E/8000E/PDS-700 and how many serial ports of 7188E/800E/PDS-700 that each PC connected on it.

7188E/8000E/PDS-700 has 32 sockets totally and it reserves some sockets for listening. 7188E/8000E/PDS-700 provides one command port for configuring all data (serial) ports. Thus, no matter how many data (serial) ports of 7188E/8000E/PDS-700 you used, you need one more socket connection for the command port to configure them.

	(A) CMD Ports	(B) Data Ports	(C) Listening Sockets = (A) + (B)	(D) Available Sockets =Max. - (C)	Total PCs use all ports = (D) / (C)	Total PCs use 1 port = (D) / ( (A) +1 port)
7188E1	1	1	2	$32 - 2 = 30$	$30 / 2 = 15$	$30 / 2 = 15$
7188E2 7188EA/X	1	2	3	$32 - 3 = 29$	$29 / 3 = 9$	$29 / 2 = 14$
7188E3	1	3	4	$32 - 4 = 28$	$28 / 4 = 7$	$28 / 2 = 14$
7188E4	1	4	5	$32 - 5 = 27$	$27 / 5 = 5$	$27 / 2 = 13$
7188E5	1	5	6	$32 - 6 = 26$	$26 / 6 = 4$	$26 / 2 = 13$
7188E8	1	8	9	$32 - 9 = 23$	$23 / 9 = 2$	$23 / 2 = 11$
8430/8830 8431/8831	1	2	3	$32 - 3 = 29$	$29 / 3 = 9$	$29 / 2 = 14$

Note:

1. CMD port = Command port (TCP port 10000)

It's used to configure all data ports (TCP port 10001 ~ 10008) of a 7188E/8000E/PDS-700, such as baudrate, data format ... etc.

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2. Data port (TCP port 10001 ~ 10008 whichs are mapped to serial port 1 ~ 8 of 7188E/8000E / PDS-700), it's used to send/receive data only.
3. Listening Sockets (of 7188E/8000E/PDS-700) = Number of Data ports + 1 CMD port
4. Available Sockets (of 7188E/8000E/PDS-700) = Max. (32) sockets - Listening sockets
5. Number of PCs could be connected to one 7188E/8000E/PDS-700 with all data ports used = Available sockets / [Number of Data ports + 1 CMD port ]
6. Number of PCs could be connected to one 7188E/8000E/PDS-700 with 1 data port used = Available sockets / ( 1 Data port + 1 Command port ) = Left sockets / 2
7. Port7000 is disabled in VxComm Server by default.